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TRANSFORMATIONS IN MANAGEMENT AND TECHNOLOGY

**UNLOCKING THE RECENT PERSPECTIVES
AND DRIFTS**

VOLUME 1 ISSUE 2



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TRANSFORMATIONS IN MANAGEMENT: UNLOCKING THE RECENT PERSPECTIVES AND DRIFTS

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Exploring HR Analytics for Data Driven Decision Making

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HR Analytics involves the application of an analytic logic for HRM function. HR analytics includes the use of statistics, developing queries and research design, fitting data to research designs, evaluating the results and then translating them into meaningful decisions. HR analytics would help in improving performance of employees, help in rationalizing HR decision making process. HR analytics can help organizational decision making more strategic and business aligned. The main aim of this article is to explore the concept, models and application of HR Analytics. The present study would also discuss the benefits and challenges involved in HR Analytics. The study would focus on the ethical standards in HR Analytics.

The present study would help in emphasizing HR Analytics as a more effective tool for HR decision making processes. The study would help in reiterating the role of HR analytics in providing meaningful insights to the organization in order to sustain, grow in a competitive environment.

Keywords: HR Analytics, Decision making, Models, Data, Applications

Introduction

HR analytics is described as the use of an analytical logic for an HRM function, with the goal of helping firms improve employee performance, streamline the HR decision-making process, and maximize the return on investment from their human resource investments. From the perspective of the employees, HR analytics offer the chance to evaluate how employees contribute to the businesses and the degree to which they can achieve their professional goals. When HR analytics are used to support important HR decisions like retention, potential talent, motivation, performance improvement, employee capability, and so forth, organizations can significantly lower the chance of making the wrong choice while simultaneously improving the decision's quality and procedure. Additionally, HR analytics can assist organizations in making more strategic and business-oriented HR decisions.

A large part of HR analytics is the application of statistics, the creation of queries and research designs, the fitting of data (big data) to those designs, the evaluation of the results, and finally the conversion of those results into decisions that have meaning. In order to move the HR decision-making process beyond HR metrics, HR scorecards, and HR dashboards, HR analytics uses behavioral modeling, predictive modeling, impact analysis, cost-benefit analysis, ROI, and other tools. HR analytics can benefit from ROI, impact, and cost-benefit analyses, although these are more descriptive in nature and time-consuming. In contrast, behavioural modeling, predictive modeling, and impact analysis can actually increase the significance of HR analytics and improve the accuracy of decisions based on them in relation to organizational strategy and commercial objectives. Let's use Figure 1.1 to better comprehend this.

Figure 1.1 HR Analytics Framework



Source: Authors

In order to determine how HR function can affect strategy and business results, HR analytics correlate organizational HR or people data with business data. Based on such impact analyses, firms can better balance their strategy and business plans in terms of HR capabilities, while also improving the quality of HR decisions. With the right and timely interventions, all HR decision-making processes may be made more successful, fostering a fruitful HR collaboration with the organizations.

Organizations use HR analytics:

- To evaluate intricate links among distinct HR variables and comprehend how these interactions relate to strategies and corporate objectives.
- Example: HR analytics, for instance, can assist firms in choosing the best candidates who will not only perform well but also be likely to stick around for a long time. Such hiring and selection techniques undoubtedly satisfy the demand for talent management procedures, which guarantee the businesses' survival and long-term growth.
- To assist in operationalizing competency-based HR processes, properly evaluating the requirement for evolving skill sets, and satisfying such competency needs with appropriate HR initiatives.
- Example: Analytics-based judgments on compensation design, training plan, designing of performance management systems, talent management practices, and other areas can provide better results. For an organization's survival and growth, talent management includes the activities of talent attraction, talent recruitment and selection, talent development, and talent retention.
- To make the HR decision-making process more holistic and scientific with cross-functional inputs, addressing the problems with decisional errors.

HR Analytics & HR Decision Making

HR decisions in firms differ significantly from non-HR decisions in terms of scope and complications. Cases of organizational failures are largely attributable to wrong HR decisions. HR decision-making process includes HR managers' opinions about a course of action.

- HR analytics has become a popular tool for HR decision-making. Integrating crucial ideas and data is necessary for a decision-making process in HR to be effective.
- Organizations have been using data to inform HR decisions for a while now. In fact, researchers like Locke (2009) and Charlieretal (2011) have found that the HR decision-making process has the most robust scientific evidence when compared to other organizational decision-making processes.
- HR decisions that alter performance standards and add new key performance indicators (KPIs) without taking into account employee feedback frequently led to organizational crises. Hence, designing policies that are inclusive of diversity or providing new career development options for employees may have a substantial impact on lowering employee attrition. Additionally, it aids businesses in building their brand equity, which might draw in fresh talent (Bhattacharyya, 2015).
- Analytics can assist in workforce planning by understanding the transition probabilities of managerial employees' attrition and helping to determine the current executive/managerial employee recruiting level in accordance with the organization's future leadership program.
- HR analytics can only help in this situation by making data available, analyzing the attrition pattern in an organization, and supporting strategic workforce planning. As a result, operational HR decisions can succeed with high levels of precision thanks to HR analytics, while strategic HR decisions become less risky.
- HR choices supported by analytics can dramatically lessen decisional bias.
Example 1: For instance, under pressure, HR managers frequently rush their hiring decisions without conducting adequate background checks on potential hires who later turn out to be problem employees. Example 2 Consensus effect (the result of groupthink), deadline effect (to achieve the target within the mandated time), ethics effect (issues pertaining to ethical compliance), regulatory effect (pertains to legal compliance issues), and branding effect are examples of factors that can lead to similar decisional bias in HR functions.
- In order to forecast the future or the implications of existing HR trends, including important future organizational challenges like sustainability, growth, revenues, statistical models created in HR analytics are used.
- Example 1: With their HR analytics packages, many consulting firms have created such predictive decision-making suites.
- Strong HR analytics may foresee the feedback loop between employee pleasure and customer satisfaction, which in turn promotes repeat business. Through HR analytics, businesses can correctly draw conclusions about what might be influencing employees' positive attitudes

History of HR Analytics

The many HR valuation models that have been in use since the early 1990s must first be mentioned in order to comprehend the history and development of HR analytics. In addition to attempting to quantify human resources for firms, these valuation models also support the usage of various ratios and values in key HR decision-making. For instance, the balanced scorecard, which Kaplan and Norton invented in 1992, can not only assess performance statistics but also offer insightful information about individuals' potential, which has a significant impact on decisions pertaining to talent management. Similar initiatives on financial valuation models were pioneered by Sullivan (2000), intellectual asset valuation was carried out by Anderson and McLean (2000), return on assets and economic value added (EVA) was carried out by Stewart (1997), and so on.

The evolution of HR analytics may be traced back to numerous HR valuation models and measurement techniques based on data collecting, primarily using statistics, in the beginning. Prior to developing metrics and using them for HR decision-making, HR managers mostly relied descriptive methods, questionnaires, and data compiled from HR operations. We could comprehend how HR decision-making processes can be made more comprehensive, scientific, strategic, and business-aligned thanks to Fitz-enz (1984) and Mattox III's (2014) ground-breaking publication on "Predictive Analysis for Human Resources."

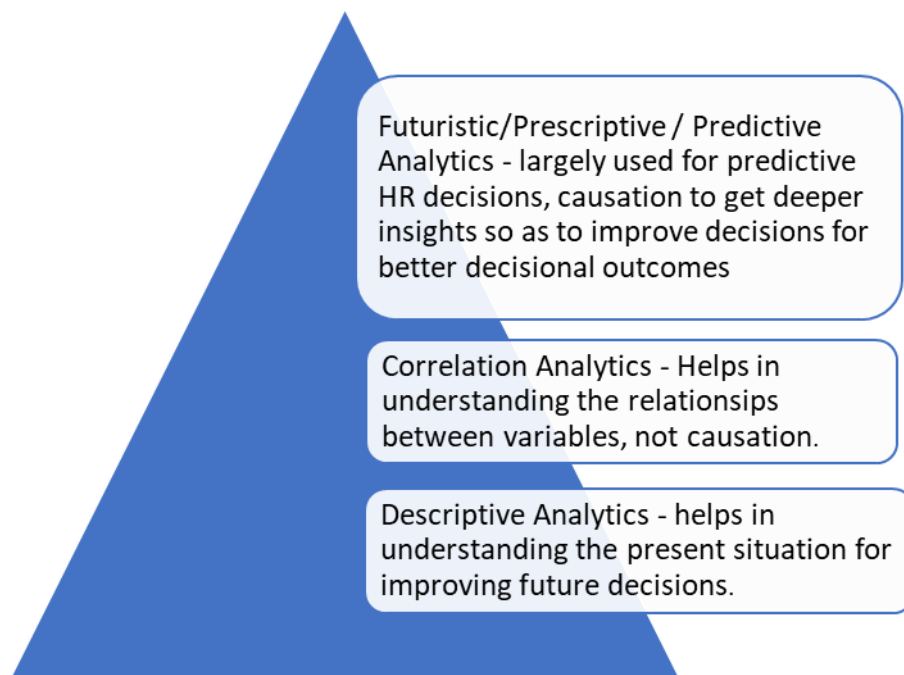
In the beginning, all measurements aid in comparison and serve as benchmarks. Measures for human resources help us grasp the relative importance of data, which improves the accuracy of our decision-making. HRIS is a form of descriptive analytics that HR managers utilize as a tool for reporting on recent and ongoing events. Since it lacks a forward-looking perspective, it is unable to see potential outcomes or the ramifications of future choices. As a result, HR managers using HRIS are unable to coordinate the HR decision-making process with organizational strategy and corporate objectives. The way that human resources decisions are made has evolved as a result of business complexity.

With HR analytics, we can take several actions to interpret the correlations between the data. Our HR decisions also become more comprehensive, smart, strategic, and business-aligned as a result of this process. Over time, HR analytics has assisted in both measuring and associating. It evolved from causation to prediction throughout time. It is now more dynamic, forward-thinking, and strategic, incorporating all organizational functional areas.

Evolution of HR Decision Making

HR managers first struggled with the use of metrics in the data-driven HR decision-making process, the scope of HR decision-making rapidly widened, necessitating HR managers to comprehend the relationships between factors. Finally, HR managers concentrate on both causality and predictions in the current stage of the development of HR analytics for efficient HR decision-making. With the use of predictive analytics, HR managers can see the terrain of the future and factor in such outcomes, i.e., the effects of their current decisions on the future, to increase the effectiveness of their decision-making.

The evolution of data-driven HR decision-making are shown in Figure 2. The phase of analytics that uses metrics is known as descriptive analytics; the phase of analytics that uses correlation (to explore the relationship between different variables) is known as correlation analytics; and the phase of analytics that uses prescriptive predictive modeling is known as HR analytics in its current form.

Figure 2: Evolution of HR Decision-Making

Source: Authors

HR Decisions:

Financial decisions and data-driven decisions are the two broad categories under which HR decision-making may be divided.

ROI on training and other financial effects of HR decisions made in firms are examples of financial HR decisions. And HR analytics is used to promote data-driven HR decisions. Eg: Google uses HR analytics to support data-driven HR decision-making.

i. Descriptive HR Decision-making

Metrics or human resources information system (HRIS) is used in the descriptive HR decision-making process to gain insight into decision-making challenges before making judgments.

For example, a high employee attrition rate is a sign of a weak employee engagement strategy in a company, possibly due to less competitive pay and benefits, fewer possibilities for professional development, and other factors.

According to the descriptive decision-making, HR managers may review the previously listed areas due to which attrition rates are greater and make any necessary corrections.

ii. Correlational HR Decision-making

We can evaluate the determinants of important factors with the use of correlational HR decisions.

HR managers must first comprehend the variables that interact with one another and how changing these variables affects the HR decision-making process in order to effectively correlate HR decisions. When HR managers are aware of these trends, links between factors can be made.

HR managers can adjust their decisions to minimize the risk of unfavorable outcomes, if any, based on this assessment of the potential effects of their choices. PRP, for instance, can be tied to a shift in an employee's performance. For better individual performance outcomes or group performance results, the PRP calculation algorithm may be altered to provide greater weight to performance results.

iii. Predictive HR decision-making

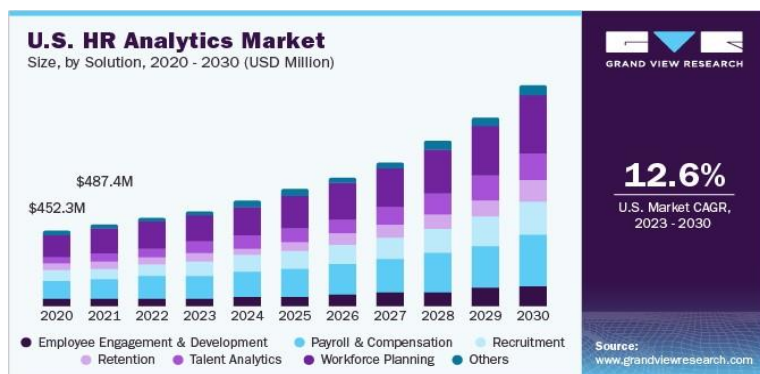
Functionally, Predictive HR analytics may also be used to collect data for micromanagement, take into account information at the individual employee level, evaluate employees' tendencies and patterns of predicted behavior.

It is evident that predictive HR analytics may support better HR decision-making while optimizing the resource constraints of the organizations.

Global HR Analytics Market

- The global **HR analytics market size** was valued at **USD 2.96 billion in 2022** and is expected to grow at a compound annual growth rate (CAGR) of 14.8% from 2023 to 2030.
- The growing need to efficiently use human resources, reduce an enterprise's operational costs, and acquire real-time observation of employee activities are the important causes. The COVID-19 epidemic has altered the corporate environment, but using HR analytics tools to draw data-driven inferences has grown increasingly important for tracking and evaluating organizational and employee productivity.
- It has resulted in a substantial paradigm shift, forcing firms to deal with social estrangement and use remote working, which has become essential to effectively handling the problem and preserving long-term company sustainability.

Figure 5 HR Analytics Market



Source : *HR Analytics Market Size, Share & Growth Report, 2030* (grandviewresearch.com)

- Employing solutions helps businesses to boost workforce productivity, simplify employee onboarding, and improve employee engagement.
- HR Analytics tools help HR professionals recruit and keep personnel, which boosts output, creates a better work environment, and increases Return on Investment (ROI) for the company.
- The market is expanding due to the demand for efficient labor management and recruitment. Many businesses make use of outside talent recruiting tools.
- As a result, vendors are embracing new technologies more and more. To meet their needs for talent acquisition, organizations are turning to technology-based solutions and services.
- The majority of these solutions are cognitive in nature, built on mobile and cloud technology. Artificial Intelligence (AI), Natural Language Processing (NLP), Robotic Process Automation (RPA), and prediction algorithms are examples of cognitive technologies that collect data from social networks and then deliver actionable insights.
- The usage of these technologies helps firms make better decisions and maximize their capital, which accelerates market growth. Machine Learning (ML), big data analytics, AI, and the Internet of Things (IoT) are projected to drive market expansion. These technologies correlate and integrate data in order to give relevant, actionable, and timely insights to improve performance, resulting in better decisions and actions.

Process of HR Analytics

- HR analytics for firms give human resources empirical data.
- Examining the framework for HR analytics, which has been used in a number of firms, we find that it begins with the identification of the most important business issues, with an emphasis on strategy and long-term sustainability difficulties.
- Evaluating the knowledge and skill sets that are present in the organizations.
- Examination of organizational data, any gaps that exist must be filled through the right interventions.
- Findings are shared and HR managers decide for necessary activities, well in advance, to enhance the decisional outcomes
- HR managers frequently start with descriptive analytics, or the use of metrics, to understand the present state in order to facilitate operations. Finally, HR managers utilize HR analytics to foresee how HR actions will affect business results and align with organizational strategy. HR managers gradually begin to apply statistics and research technique for better analysis of decision consequences. HR managers can change or improve HR decisions using the results of predictions.

Benefits of HR Analytics

Organizational long-term sustainable nature of human resource information is changing due to the complexity of business and the growing importance of human resources.

- HR Analytics aids HR managers to evaluate employee engagement, forecast future talent needs for firms, and link employee happiness to practices in customer relationship management (CRM) and other related areas.
- HR analytics helps in the diagnosis of HR problems, which can make it easier to take preventative measures by using the proper solutions.

- Analytics in HR demand cross-functional expertise. HR managers today need to understand that analyzing data about people in silos will not help them. Instead, it is necessary to analyze people data in accordance with other functional areas of businesses.
- HR managers can better align their HR decisions to support attaining the organizational goals by having a better understanding of their business objectives.
- Similar to how HR managers can implement HR plans and programs that can aid in achieving strategic objectives by mapping company strategies.
- HR managers can predict the trends by assessing several decisional alternatives based on the data by using HR analytics
- For instance, using a comprehensive approach to data analysis, HR managers may determine which employees can be retain and which ones won't. Hence, companies can make a strategic decision when creating a succession plan and spending money to develop future leadership skills.
- Planning scenarios, or imagining future developments and drafting potential strategy responses to address them, is another area where HR analytics can be useful. For instance, by using HR analytics effectively, HR managers may predict when they will encounter leadership crises and identify potential candidates within their firms to step in.
- Once we develop a business case and examine how it might assist with comprehensive decision-making, we can comprehend the relevance and usefulness of HR analytics.
 - **Example 1:**

The big corporation Maersk, which has its headquarters in Denmark, used HR analytics to research how its employee engagement programs may increase managerial commitment, increase training efficacy, and improve workplace safety. Workplace safety is a crucial problem for Maersk's operations.
 - **Example 2:**

If a company believes that investing in employee engagement will increase sales revenue and expects HR analytics to give such information. Measuring the shift in the employees' attitudes might be a better technique to investigate this. It's comparable to how increased employee engagement can help staff adopt a positive attitude, which in turn boosts sales income when connections with customers strengthen. Therefore, it is necessary to analyze the impact of HR analytics on the HR decision-making process in order to understand its significance or importance.
- For HR analytics, we work with several vendors. Oracle, SAP, IBM, and other top providers of HR analytics. Aside from this, we have a variety of minor suppliers. An organization can select a suitable vendor to create HR analytics solutions based on the functional needs.

Challenges of HR Analytics

Lack of in-depth decisional guidelines for key HR decision-making processes, such as talent acquisition or recruiting and selection. Lack of such policies may lead to inconsistency in

decision-making and cannot protect HR decision-makers from any potential future liabilities, including legal troubles.

a. Data quality and precision

One of the most difficult aspects of adopting HR analytics in recruitment is ensuring that the data used is correct, relevant, and up to date. Inaccurate or inadequate data can lead to erroneous conclusions and poor decision-making.

b. Data confidentiality and security

HR analytics is used to acquire, store, and analyze sensitive personal information about candidates. Companies must manage complex data privacy requirements and guarantee compliance with all applicable laws. They must also take the required precautions to protect candidate data against unauthorized access, misuse, and breaches.

c. Knowledge and expertise

Implementing HR analytics necessitates a unique blend of HR, data analytics, and technical knowledge. Organizations may struggle to recruit people with the necessary skill set, and it may be difficult to train existing HR employees to use HR analytics tools and procedures effectively.

d. Aversion to change

Adoption of HR analytics may face internal resistance, especially if it represents a major deviation from old practices. Change management activities are required to overcome this opposition, and HR professionals must be prepared to clearly and persuasively articulate the benefits of HR analytics.

e. Infrastructure and technology

The use of HR analytics necessitates an investment in technology and infrastructure. Organizations must analyze and select the appropriate tools and platforms, integrate them with existing systems, and keep them up to date. This can be a time-consuming and resource-intensive process.

HR analytics has many advantages for the recruitment process, including data-driven decision-making, increased efficiency, a better candidate experience, and improved workforce planning. Organizations, on the other hand, must be prepared to meet the obstacles involved with applying HR analytics in recruitment, such as data quality and accuracy, data privacy and security, skills and knowledge, resistance to change, and technology and infrastructure.

Aligning Human Resources to Business through HR Analytics

Organizational HR roles have developed from typical administrative positions to strategic positions that make the most of technology-enabled HR processes and also the application of analytics.

- When HR analytics is used, tasks like talent management, cost optimization, performance improvement, employee engagement, and so on, may be completed more successfully. Using HR analytics, Human resources can be shown in the form of quantifiable worth at present, which help in understanding how human resources are aligned with organizational plans and business goals.

- With HR analytics, we can analyze not only the expenses of hiring but also crucial information that may have a substantial impact on the operations and business goals of businesses, such as cycle time to hire and attrition rate in new hires.
- Predictive modeling allows for the alignment of HR analytics with business and organizational strategy in areas such as personnel management, change management, redundancy planning, and cascading effects. of improvements in business outcomes, customer satisfaction, and staff satisfaction.
- Based on the present trend and forthcoming company objectives, manpower or HRP assures the availability of the appropriate manpower at the appropriate moment. When compared to the organizations' future business objectives, the demographic information regarding present employees' attrition rate, typical manpower wastage, and so forth, can aid in the development of a predictive model for manpower forecasting. Based on this predictive model, we may rationalize the required personnel by category and prepare for layoffs or new hiring (including internal hiring) accordingly.
- One of the top concerns of businesses that strive for survival and growth is the function of talent management, which includes talent attraction, talent recruitment and selection, talent development, and talent retention. Numerous technology companies and consulting firms offer specialized talent analytics solutions that are predictive and can aid in efficient talent management by evaluating the available employee data. Then, making relevant recommendations, such as luring talent from target firms, seeing prospective talent in current employees, developing such potential employees, formulating suitable talent retention plans, and so forth.
- HR analytics may similarly assist in forecasting how its cascade impact will churn to customer satisfaction and customer retention and commensurate rise in sales income by evaluating employees' performance data and assessing their degree of happiness.
- Despite its importance and potentiality to align with business goals and strategies of the organizations, even on date very limited number of organizations make its effective use. A Harvard Business Review research report (2014) indicates that even those organizations which make use of HR analytics limit their utilization intermittently largely on tactical decisions.

Steps to implement HR Analytics

Globally, businesses are now adopting HR analytics to make smart HR decisions that are in line with their aims and strategy.

To implement HR analytics, based on industry practices, the following steps can be recommended:

- **Clarification:** HR managers still need further clarification on the meaning, idea, and application of HR analytics as well as how it may contribute to better HR decision-making procedures in firms. HR metrics and HR analytics are even mistakenly viewed as one and the same by some HR managers. HR Metrics, for instance, may help us gauge the attrition rate, and HR analytics can even help us anticipate who will stay and who will depart the company with a high degree of accuracy.
- **Top management support:** Investing in technology support, software solutions, training, and other things is necessary for HR analytics. Human resources cannot obtain HR analytics for their decision-making support unless the top management of a business adopts it in principle.
- **Incremental approach to HR analytics implementation:** Many firms invest in HR analytics anticipating a complete transformation of HR decision-making procedures. But this is the

incorrect strategy. To improve the HR decision-making process, an incremental approach to implementing HR analytics solutions, i.e., starting with merely picking its adoption in one or two HR functions, is seen to be more appropriate. HR managers may gradually become more tech-savvy, develop their skills, and decide how to use HR analytics on their own.

- **Create standard definitions and glossaries for HR analytics:** This is known as the need for creating an HR analytics dictionary. This will guarantee a shared knowledge of the concepts and transparency in the HR analytics process.
- **Create a cross-functional team:** It is usually preferable to create a cross-functional team to apply HR analytics in firms. The consequences of HR decisions on organizational business goals and strategies are not understood by HR managers who work in silos. They should create connections between HR decisions and other functional domains like operations, marketing, and finance. Multidisciplinary team should be created.
- **Train the workforce:** Ensure that all users of HR analytics receive reinforced training in addition to vendor-supported training. Better clarity is ensured by more training reinforcement, and people can feel secure using HR analytics in their decision-making processes.

Applications of HR Predictive Analytics

Predictive analytics and HR assist organizations in obtaining forward-looking data on crucial HRM operations, which can then be used to build statistical models that forecast future trends. Below is the list of HR and predictive analytics' application areas:

1. Creating a manpower inventory and segmenting employees:

The fundamental biographical information of the personnel as well as their performance trend, experience, training, health records, cross-functional exposure, leadership abilities, and other data are essential manpower inventory data. Organizations can forecast the type of training programs that will best meet their specified training needs using certain learning algorithms, as well as determine how diversity inclusive programs will contribute to the creation of an inclusive workplace culture. Organizations can create strategies appropriate for various employee segments by utilizing demographic information about their workforce, which can boost employee happiness.

2. Attrition risk score preparation:

Based on employee data, attrition risk score preparation can go as far as indicating which employee or employees are most likely to quit their jobs. This can help HR managers start the right action plans to reduce attrition, especially for individuals who are high performers.

3. Create a loyalty score:

Data analysis and predictive modeling may also assist in creating a loyalty score for employees. Based on this score, businesses can decide whether to invest in high-scoring staff or to create a long-term retention strategy that includes career development. HR managers can use employee demographic information, performance information, pay and benefit information, training information, interpersonal relationship or behavioral information, and other information to calculate the attrition risk score and loyalty score.

4. Data on personnel planning, hiring, and redundancies:

Human resources must evaluate the availability of labor and make strategies for hiring as well as redundancies based on future company plans. Predictive Analytics can help to learn about the availability of people in various categories. It is also possible to estimate the level of personnel redundancy using projected attrition score, which aids human resources in creating a strategic road map early for efficient redundancy management.

5. Profiling-based hiring and selection:

Profiling-based hiring and selection is a continuing, strategically significant function that goes beyond replacing lost labor due to employee attrition since it allows for the identification of talent. Recruitment algorithms are created based on a variety of data about possible candidates, including their engagement in social networks, their performance records in prior organizations. Through predictive modeling, statistical correlations between individuals' potential and organizational needs can be identified, and a selection decision can then be made in accordance with those findings.

6. Mapping employee emotions and sentiments:

This data is essential for crucial HR decisions, such as those involving organizational transformation, policy changes, adjustments to remuneration and rewards, and so forth.

Compelling Reasons of HR Analytics

Some of the compelling reasons for HR analytics can be elaborated as follows:

1. Recognizing strategic and business roles for human resources:

Human resources must employ HR analytics to play strategic and business roles that go beyond simply being justified by historical data and into the realm of prediction.

2. Demand for ROI:

Every HR decision, whether positive or negative, affects an organization's performance and productivity in some manner. Investment is necessary to measure such incremental improvement in terms of; once we calculate the ROI, it is evident that the payback from the investment can be calculated.

3. Meaningful utilization of HR data:

HR record-keeping as a system is prevalent in organizations for quite some time. So far, such HR data were kept more for compliance reasons.

4. Need for driving business-focused results:

Putting analytics in the context of business goals and outcomes, human resources can become strategic, proactive and predictive. This makes the holistic understanding of business possible and can focus on all HR activities towards business success.

5. Achieving team effectiveness:

By using HR analytics to link HR activities and HR outcomes, we can help our teams become more laser-focused on the correct goals, which will help to improve business outcomes.

6. Improving relationships:

HR analytics' capacity for compiling business impact aids in connecting human resources with other organizational activities, which can enhance the effectiveness of HR choices.

7. Effective executive reporting:

HR analytics may improve executive reporting systems and communication by helping to report HR actions in terms of business outcomes.

8. Increasing the authority and impact of human resources in organizations:

HR managers can improve their decision-making abilities and promptly convey their decisions to the top management by using HR analytics. It goes without saying that this raises their stature and influence within the company.

Ethical Issues in HR Analytics

The ethical principles have been provided for HR professionals; nonetheless, adherence to these guidelines can also assure compliance with the ethical concerns related to the use of employee data. CIPD UK 2012 highlights the necessity of to advance employment and business practices that support equality of opportunity, diversity, and inclusion and uphold human rights and dignity, one must: establish, maintain, and grow business relationships based on confidence, trust, and respect; demonstrate and defend professional and personal integrity and honesty at all times; show sensitivity for the customs, practices, cultures, and personal beliefs of others; advance employment and business practices that protect all confidential, commercial information;

The following is a summary of more detailed human resources analyst ethical criteria based on Schwartz's (2011) research:

1. Adherence to societal, cultural, and legal norms.
2. Provide protection from all stakeholders' interests.
3. The process of HR analytics accountability.
4. Provide protection against information security.
5. Concern over sensitive information.

HR managers must watch carefully while using HR analytics to avoid ignoring employee privacy without permission.

HR Analytics Case Studies

- In Johnson & Johnson, an American conglomerate, sought to enhance both staff retention and performance. At the time, recruiters gave preference to job seekers with industry expertise since they believed they would be more likely to stay with the business and would be able to contribute more quickly. As a result, the number of new hires who had just graduated from college fell by 10% at the company. By applying HR analytics Johnson & Johnson company Examined the relationship between experience and turnover, HR department and the people analytics team gathered data on 47,000 employees. The information showed that new hires stayed with the company

"significantly longer" than those with greater work experience. Based on the people analytics, Johnson & Johnson increased hires of new graduates by 20 percent, effectively reducing turnover while maintaining performance.

- Cisco: Choosing an Office Location: This international technology firm has about 75,000 employees and is headquartered in San Jose, California. When it came time to open a new regional office, the company employed people analytics to find the ideal building and location. The goal was to prevent wasting space, to foster a healthy work atmosphere for employees, and to attract top talent to the firm. Because of the findings of Bailie and his colleagues, the corporation opted to go with a different location than they had originally planned. According to their study, the initial option would have left the recruitment team struggling to fill the essential posts. The insights also altered Cisco's process for building new offices by including people analytics far earlier in the process. New office planning, staffing, and operation became significantly more resource efficient.

Conclusion

In the future, HR analytical will be defined by progressively more advanced technologies, analytical capabilities, as well as a rising emphasis on the employee experience and the ethical implications of HR data gathering and analysis. Organizations that continue to invest in HR Analytics will gain a competitive advantage in the marketplace by making more informed HR choices, enhancing worker productivity and engagement, and ultimately generating better business outcomes.

However, it is critical to note that implementing emerging HR Analytics trends and technology is not without problems and considerations. Organizations must carefully examine ethical issues, talent and resource requirements, financial consequences, and alignment with larger business objectives.

To summarize, the future of HR Analytics is bright, with considerable potential to revolutionize the way businesses manage their employees. Organizations can position themselves for success in a fast-changing business landscape by embracing emerging trends and technology in HR Analytics and carefully managing the obstacles and concerns involved with their adoption.

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Determination of Multichannel consumer Buying behaviour towards fashion apparel : An application of the logistic regression model

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Abstract

Apparel is one of the consumer's essentials, which conveys information about their social and economic standing as well as lifestyle. This paper focuses on determining the buying behaviour of apparel and the expectations of conservative customers during their buying. For this purpose, a survey was conducted among Bangalore customers who prefer to buy apparel through multichannel facilities. 514 customers were asked to answer questions in the survey. As a result of the research, the demographic characteristics of customers were analysed initially, and then logistic regression analysis was conducted to understand their preferences for apparel buying. This study of apparel consumer behaviour will help all clothing businesses examine their current approaches more closely and adjust their value propositions to meet the needs of the ever evolving 21st century consumer.

Keywords: *Apparel, buying behaviour, Customers*

Introduction and Rationale of the Study

India's fashion scene is diversifying because of changing lifestyles, technological advancements, and emulation of Western styles. Consequently, clothing trend, particularly in India, has a significant influence on how people consume apparel. Axis Direct, 2017 found that the apparel market is expected to expand at a compound annual growth rate (CAGR) of 11.8 per cent, reaching approximately US\$180 billion by 2025. In a similar vein, Infoline (2017) reported in another survey that India's garment consumption is expected to nearly triple soon. The apparel industry also plays a significant role in our economy because it is expanding rapidly because of changing lifestyles, rising incomes, and urbanisation; as a result, its growth is closely linked to the strengthening of the Indian economy A. T. Kearney (2010). Therefore, organisations, government bureaucracy, and marketers must prioritise their attention to this area. In terms of accessibility, style, trend, use of branded products, fabric preference, and knowledge of current trends, the sector has witnessed a significant change.

A limited number of characteristics and channels that influenced consumers' purchasing decisions were the focus of some of the earlier research conducted in the Indian business context. It has been discovered that very few studies have concentrated on fashion apparel. As a result, no thorough study has been done in the Indian setting that examines the multichannel clothing buying behaviour. Therefore, it was essential to carry out a scientific investigation on this title "Determination of Multichannel Consumer Buying Behaviour towards Apparel - An Application of logistic regression model".

Brief Review of Literature

The study conducted by Balanaga and Krishnakumar (2013) investigated the significant dimensions of garment purchasing behaviour among diverse customers. The findings indicated that the three main dimensions that the customers favoured were store attributes, promotion, and reference group.

In their investigation of the factors influencing consumers when they buy clothing, Syed Irfan Shafi & Madhavaiah (2014) found that demographics, store attributes, product attributes, and reference groups are significant factors in consumer behaviour.

The factors that influence the buying decisions of regular and branded apparel buyers were studied by Sarina Asif and Tanuja Kaushik (2017) Their findings showed that age and the location of the purchase are significantly correlated and that the three most crucial factors influencing the purchasing process are customer satisfaction, purchase ideas, and branded products.

In their research, Hopper et al. (2016) examined the key factors that shoppers take into consideration when making clothing purchases. They discovered that several characteristics, including yarn quality, cosiness, colour, attraction, fashion, brand, occasion, and style, were the ones that consumers valued the most.

In their research, Tamgid Ahmed Chowdhury and Tania Akter (2018) found that while purchasing casual clothing, young male and female consumers preferred different fashion characteristics. They found that the two most highly regarded attributes, according to both genders, are elegant casual wear and discounts. However, there were some disparities in their tastes; most women valued fabrics that were softer, more durable, and less irritating, while the males selected colours that were appropriate for an office setting.

Rajput et al. (2012) found that there is little difference in brand awareness and frequency of purchase between men and women when it comes to overall shopping spending. They also identified demographic factors and consumer awareness about the decision to purchase branded apparel. Furthermore, the research findings indicate that in addition to brand awareness and perception, several additional elements, such as product attributes, consumer preferences, and other aspects, impact and permeate their purchasing decisions.

To better understand how consumers view local clothing, Md. Mazedul et al. (2014) looked at quality, pricing, discounts, as well as functional and aesthetic characteristics, in addition to other considerations. Additionally, they stated that consumer purchasing behaviour is influenced by demographic and purchase trends.

The study conducted by Tamgid Ahmed Chowdhury and Tania Akter (2018) aimed to determine the fashion characteristics that young male and female consumers preferred when purchasing casual clothes. The results indicated that elegant casual wear and discount are the attributes that both genders ranked as most important. Men prioritised colour appropriateness and suitability for an office setting, while most women valued fabrics that were softer, more durable, and less irritating.

Similar to Chakrapani's (2015) findings on understanding perception, Prasad's (2012) study on purchase drivers found that consumers take into account specific attributes like value, style, concern, reference, and credibility when making clothing purchases. Additionally, consumers are influenced by the product's wearability, price, design, fabric quality, and aesthetics.

Wei and Jung (2017) stated that while buying clothing, Chinese consumers placed a high value on needs, savings, using sustainable resources, and investment.

Customers' decisions to purchase from a channel or elsewhere were impacted by a limited number of critical elements, according to Schoenbachler & Gordon (2002). The research findings indicate that the decision to purchase from a certain channel is impacted by two factors:

- (i) the customer's demographics, such as age, income, and occupation; and
- (ii) their lifestyle, which helps determine whether they are heavy or light users.
- (iii) website design, which should have a decent product layout, be visually appealing, be easy to use and purchase, and lastly,
- (iv) product/service category since some things are best suited to be purchased solely online and others only through physical stores.

According to the findings of Teerling & Pieterse's (2010) study, women were more drawn to the new channel's holistic value, while males were more drawn to it and were more interested in its distinctive features and technical components. Additionally, it was shown that consumers who had completed their schooling were more likely to access online resources. Therefore, purchasing behaviour in a multichannel environment is influenced by the demographics of the consumers and is closely linked to other features of the consumers.

In their 2016 study, *Kadri G. Yilmaz et al.* created a prediction model to ascertain how Ankara, Turkey, citizens will behave when making purchases of re-manufactured goods. Using logistic regression analysis, the proposed model forecasts re-manufactured goods consumer behaviour. The findings indicated that several factors, including low costs, a company's reputation for dependability, and product advertising, changed consumers' purchasing habits from not buying anything at all to buying re-manufactured goods.

In their work, *Yeung, Ruth et al.* (2011) sought to show how consumer behaviour may be predicted using logistic regression in situations where the explanatory factors are dichotomous and interact. The study provided an example of how to forecast both the odds and the tendency to purchase tea takeaway. The findings support the usefulness of logistic regression as an analytical technique in marketing research and also open the door to its application in other comparable studies.

A consumer-utility-based behavioural rationale is presented for the applicability of the binomial logistic regression for modelling dummy variables. The relationship between the odds ratio and the logistic regression probabilities is presented.

The use of probability in marketing analytics is something we might not be familiar with. How likely are customers to purchase your product compared to the likelihood that they won't? What is the probability of keeping a customer compared to the likelihood of losing one?

Objectives

1. To build a model which represents consumer purchase behaviour about apparel buyers.

2. To find the key factors which influence the behavioural patterns of apparel buyers.

Research Methodology

The present study used a questionnaire with closed-end questions and surveyed the consumers of Karnataka province. The questionnaire depicts the buying behaviour of consumers on apparel products.

With the help of a simple random technique questionnaire has been administered to 504 to collect the information. Part of the questionnaire deals with the demographic data of respondents containing open and close-ended questions. In the second part, questions relating to customers' opinion on various attributes related to apparel buying has been collected through a five-point Likert scale. The reliability and validity of the instrument have been carried out with Cronbach Alfa value and validity test. Besides this, a correlation analysis is also checked for multicollinearity of predictor variables.

The demographic variables used in the analysis are gender, Income marital status, education, occupation, and occupation.

The dependent variable is classified as **Regular buyers** and **rare buyers** of apparel from the question 'How often do you buy apparel through multichannel?' the options given for them to answer were, once in a week, once in 15 days, once in a month, once in 3 months, once in 6 months, and more than a year. Those who buy weekly once, for 15 days, monthly once, and once in three months are classified as 'Regular buyers' whereas customers who buy once in 6 months and above are classified as 'Rare buyers.'

Table 1: Independent variables were chosen for the model.

Variable	Description of the variable
X1	Buying new clothes gives freedom of expression and pride (BNCFEP)
X2	Buying new clothes brings Happiness (BNCBH)
X3	Buying new clothes is a pleasant activity (BNCPA)
X4	Buying new clothes improves my self-esteem (BNCISE)
X5	Buying new clothes makes me go with the latest trend (BNCMLT)

Hypotheses regarding factors that affect the prediction of consumer behaviour for apparel items were developed. The hypotheses mostly depend on the predicted value of the factors. The Conclusion about the hypothesis regarding its acceptance or rejection is dependent on the significance value of the factor in the logistics regression results.

H₁:

Buying new clothes gives freedom of expression and pride affects the prediction of consumer Behaviour when purchasing apparel items.

H₂:

Buying new clothes brings Happiness and affects the prediction of consumer behaviour when purchasing apparel items.

H3:

Buying new clothes is a pleasant activity that affects the prediction of consumer behaviour when purchasing apparel items.

H4:

Buying new clothes improves my self-esteem and affects the prediction of consumer behaviour when purchasing apparel items.

H5:

Buying new clothes makes me go with the latest trend and affects the prediction of consumers when purchasing apparel items.

Logistic regression is a multivariate regression where the dependent variable takes two values (binary outcome) and predicts the likelihood of an outcome based on independent variables. In logistic regression, the independent variables may be qualitative, quantitative, or categorical. According to Lee,2005, logistic regression does not require the assumption of normality, but the only assumption required is heteroscedasticity. Further, Agresti,1996 mentioned that for the interpretation of categorical and binary data in the research area, logistic regression is beneficial.

In the present study, the logistic regression method is utilized to predict the purchase behaviour of consumers for apparel. The model recognizes the association between the purchase behaviour of apparel buyers and the factors that influence buyers' preferences to purchase these apparel. The outcome variable is analysed concerning the five independent variables. The outcome variable is classified into binary outcomes. the value '1' to the regular buyers of apparel through multichannel and '0' to the customers who are rare buyers of the apparel. Hence, the results are interpreted concerning these values.

The binary logistic regression with multiple predictors is non-linear and the expression as a log of the outcome variable is

$$\text{Log} \left(\frac{P}{1-P} \right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k$$

Where P represents the likelihood of the outcome of interest, β_0 is the intercept term, and $\beta_i (i=1, \dots, k)$ are the regression coefficients of k predictors in the model, The dependent variable is the logarithm of the odds. The maximization of the likelihood function is commonly applied to estimate the coefficients of the model.

With logistic regression, it is difficult to interpret the relation between the predictors and the probability that $y=1$ directly because the logistic regression is nonlinear. However, the relationship can be interpreted indirectly using the odds ratio. The odds ratio measures the impact on the odds of a one-unit increase in only the independent variables.

(The data was analysed through Excel and SPSS).

Data Analysis

Data analysis was carried out initially with demographic analysis of respondents, chi-square tests to know the association between demographic variables versus Regular or rare buyers of apparel and by logistic regression model to predict the probability of regular buyers.

Table 2: Reliability analysis

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No. of Items
0.828	0.814	5

The recommended value of Cronbach's alpha for reliability of the scale is above 0.7. Therefore, the Cronbach alpha of 0.828 based on five variables given in Table 2 tells that the refined measurement scale is highly reliable and consistent.

Table 3: Demographic results

Demography	Category	Frequency of		Per cent of Regular buyer	Pearson's Chi-square	d f	Sig
		Regular Buyer	Rare Buyer				
Gender	Male	146	82	43.06	1.729	1	0.189
	Female	192	84	56.64			
	Total	338	166	100			
Age	Up to 25 years	57	25	0.17	9.275	3	0.026
	26-35 years	150	54	0.44			
	36-50 years	93	65	0.28			
	Above 50 years	38	22	0.11			
	Total	338	166	100			
Education	Up to HSE	2	0	0.01	3.175	4	0.579
	Degree/Diploma	72	34	0.21			
	PG	144	82	0.43			
	Professional Degree	94	40	0.28			
	Doctoral Degree	26	10	0.08			
	Total	338	166	100			

Occupation	Govt. Employee	11	3	0.03	11.561	4	0.021
	Private Employee	215	95	0.64			
	Self-Employment	29	31	0.09			
	Casual and other employment	17	9	0.05			
	Depending on Family	66	28	0.20			
	Total	338	166	100			
Marital status	Single	111	45	0.33	2.812	2	0.245
	Married	225	121	0.67			
	Widow/Widower	2	0	0.01			
	Total	338	166				

The majority of the respondents are women (56.64 per cent), college-level (64 per cent), aged 26-35 years old (44 per cent), private employees (64 per cent) and married (67 per cent).

Table 3 results indicate that only age and occupation are significant (P-value <0.05). This means age and occupation of consumers have an impact on buying apparel through multichannel.

Table 4: Inter-Item Correlation Matrix

Variables	X ₁	X ₂	X ₃	X ₄	X ₅
X ₁	1				
X ₂	0.07	1			
X ₃	-0.108	-0.611	1		
X ₄	-0.067	0.059	0.101	1	
X ₅	-0.066	0.125	-0.02	-0.203	1

Further, for the main objective of the study, the logistic regression model has been estimated. The logistic regression study involves; a) model summary b) An overall evaluation of the logistic model and goodness-of-fit; c) Statistical significance of individual regression coefficients; and d) classification accuracy.

The logistic regression model was designed to predict the consumer behaviour (regular buyer /rare buyer) of apparel through multichannel based on the inputs of the different factors chosen

in the study. As shown in Table 5, the chi-square value for the model is 154.609 and the overall significance level of this model is below 0.05. Hence, the model is acceptable.

Further, Hosmer and Lemeshow Tests – which show the goodness of fit (P-Value >0.05) support the feasibility of the model (Table 6).

Table 5: Omnibus Tests of Model Coefficients

	Chi-square	df	Sig.
Step	154.609	5	0
Block	154.609	5	0
Model	154.609	5	0

Table 6: Overall Model Evaluation and Goodness-of-Fit statistics Hosmer and Lemeshow Test

Test	Category	χ^2	d f	P value
Over model evaluation	Likelihood ratio test	484.18	5	0.000
Goodness of fit	Hosmer & Lemeshow	11.54	8	0.173

Table 7: Classification Table

Observed	Predicted		Percentage Correct	
	Buyer (Regular/Rare)			
	Regular	Rare		
Buyer (Regular/Rare)	Regular	303	35	89.6
	Rare	86	80	48.2
Overall Percentage				76

0.5 is the cut-off value

The Classification Table 7 gives the correct predictions of the logistic regression model. The result indicates the average correct prediction of the proposed model is 76% regarding the consumer buying decision of apparel through multichannel.

Table 8: Variables in the Equation

	β	S.E.	Wald	df	Sig.	Exp(B)
BNCFEP	0.099	0.165	0.355	1	0.552	1.104
BNCBH	0.514	0.179	8.253	1	0.004	1.671
BNCPA	0.385	0.179	4.648	1	0.031	1.47
BECAUSE	0.932	0.129	52.261	1	0	2.541
BNCMLT	0.518	0.13	15.993	1	0	1.679

Constant	-8.339	1.117	55.73	1	0	0
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Table 8 depicts the significance of independent variables considered in the study regarding consumer preferences for apparel. Four out of five independent variables are significant. ($P < 0.05$): Buying new clothes brings Happiness (BNCBH), Buying new clothes is a pleasant activity (BNCPA), Buying new clothes improves my self-esteem (BNCISE), and buying new clothes makes me go with the latest trend (BNCMLT). As per the results, four hypotheses are accepted (H2, H3, H4, H5). The variable, buying new clothes gives freedom of expression and pride (BNCFEP) is not significant and hence we reject hypothesis H1.

Since the Wald's statistic value for all significant variables is above 2, the variables used in the prediction of the dependent variable are said to have an impact on the model. The logistic regression analysis reveals several important results on consumer behaviour for regular buyers of apparel.

The odds ratio of the variable BNCBH given in the last column of Table 8 is 1.671 which is greater than 1 and indicates that this variable increases the odds of a consumer being in the regular buyer category increase by 67.1 per cent. Similar interpretations can be given to the other three significant variables whose odds ratios are greater than 1.

CONCLUSION

The purchase behaviour of consumers for apparel is an uncommon study topic in the marketing literature. This present study focused on proposing a new model to predict consumers' purchase decisions through multichannel for apparel. The questionnaire is designed to recognize the factors affecting the purchase decisions of consumers – regular or rare buyers of apparel. In the proposed model, the dependent variable is a buyer of apparel (regularly or rarely), while the independent variables are the effective factors over their behaviour. The analysis reveals that the factors, that buy new clothes brings Happiness, buying new clothes is a pleasant activity, buying new clothes improves my self-esteem, and buying new clothes makes me go with the latest trend are influential factors in consumers' decision process of regular buyer of apparel. On one hand, these factors induce purchasing apparel regularly through multichannel. On the other hand, buying new clothes gives freedom of expression and pride stands as the factor leading to rarely buying apparel.

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Digital Empowerment for Women: Bridging the Gender Gap in Technology

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ABSTRACT

Technology has encroached on all the aspects of life for Indians like education, jobs, health care, transportation, telecommunication, banking etc. are to list a few. The clear indication of this is very much visible from the increase in the number of mobile users in India. People from rural area also now these days using third party payments for their daily transactions .Hence technology has enhanced the living standard of people in India, hence it can be used for the empowerment of women as well. Any attempt to improve the quality of life of people in our Country would not be complete without a step to improve the quality of life of women over there, which leads towards the empowerment of women. There is a high degree of Technology illiteracy inhibits the use of it, especially among rural women in India. They need sufficient computer education and training facilities to develop the needed competencies to seize the opportunities opened up by technology. This paper throws light on the various area where women can make use of technology to uplift their life and hence directly help in women empowerment in India.

Keywords: Technology, Women empowerment, women safety, social awareness, technology for household.

INTRODUCTION

The number of smartphone users in India was estimated to reach over one billion in 2023 according to the studies conducted by statista which gives a clear indication on the impact of technology on Indians. According to IBEF “India is the top exporter of IT products, has the third-largest pharma sector and a fast-growing contract research segment.India stands third globally in the number of peer-reviewed science and engineering publications”. India is leading in exports of business and information technology (IT) services which helps in technological advances and economical improvement.

Information technology has become one of the important force in transforming social, economic, and political life in India. The Beijing Declaration and Platform for Action adopted at the Fourth World Conference on Women in 1995 called for the empowerment of women through enhancing their skills and knowledge with proper education and access to information technology. It also included a strategic objective: “Increase the participation and access of

women to expression and decision making in and through the media and new technologies of communication”.

It is noticed that any advances in information technology have facilitated a global communications network that crossed national boundaries and has an impact on the attitude of the people resulted in a change in their behaviour and mannerism. Technological advancements have the power to break down the barriers that impede women's progress and enable them to fully participate in the various fields which male dominated earlier. Various forms of digital expression such as blogging, social networking amplify women's voices and increase their self-esteem. women are becoming more aware of digital platforms to educate and upskill themselves.

Women who are living in extreme poverty are excluded from this discussion as they will be illiterate and won't be able to educate then to use technology where most of the facility needs atleast the knowledge to read and write as well as they may not have the basic requirement – the mobile with internet connection for getting technology support.

The following sections we will discuss the various area where women can leverage the use of technology to uplift their living standard.

- (i) Women's enhance education
- (ii) Women's increased access to job Markets, helps in better decision making resulting in acquiring better designation and improve entrepreneurship using Technology support
- (iii)Ease of household activities
- (iv) Easy-Family communication
- (iv)Increase Social awareness
- (vi) women's improvement in health and hygiene (vii) use of technology for safety.

i. Technology for Women's Education:

Satellite, radio, TV and mobile with internet provides opportunity for non-formal and continued education, that help women at home to opt for their higher education. Women with constraints on mobility and access to public places get education content to their door step and can make a significant starting point. Technologies are being used the world over for open and distance learning. Various certification courses are now available online which can enhance the professional skills which is a major sort out for women who are in search of jobs. Smile: (Savitri Marketing Institution for Ladies Empowerment) is a voluntary organisation in Pune. This project has increased literacy level of underprivileged women through the usage of ICT[2].

ii. Women at work and Technology:

Working women faces gender bias at work places in many organizations still now their remuneration also may not be as equal to their male counterparts at work. In most of the situations women need to take care of both household things taking care of children's health, educations and so along with work pressure at office. Most of the working women give priority to their family's emergency situations over work at office and hence many women had to sacrifice their career aspirations for family. But as technology advances the scenario has been transforming and changing for the good. Technology advancement has given them a chance to work remotely, take care of their household and yet excel in their fields. Through technology, it is becoming easier for women to access education, find jobs, and start businesses while breaking down traditional gender roles and stereotypes. Most of the companies like Infosys provides opportunity to those women who have taken a break in their career for their personal life to join back to the roles they worked earlier with a selection process. There is a growing trend of women leaving their traditional corporate tech jobs now these days and embracing the freedom of freelancing.

SEWA (Self Employed Women's Association) : uses ICT for women empowerment. The main goal of SEWA is to promote local income generating opportunities among women. The Self Employed Women's Association SEWA, with 200,000 membership is spread over 800 villages in Gujarat. It uses an interactive satellite communication and Internet-based training programme to develop a cadre of barefoot managers among the poor women workers, focusing on women in panchayats, forests, water conservation and so on.[2]

E-commerce have given opportunity to poor women to sell their hand made product with the support of various supporting NGO's.

Most of the working women in India contribute to the economy in one form or another, much of their work is not documented or accounted for in official statistics. Now these days women are working along with men to plough fields and harvest crops while working on farms, women also contribute to weaving and making handicrafts while working in household industries, they sell food and hand made crockery while working in the informal sector. Most of the families in India even now her salary is handed over to father, husband or in-laws. So the basic motive for seeking employment of getting independence is nullified in many women's case in India. Research has shown that women contribute a higher share of their earnings to the family and are less likely to spend it on themselves. [4].

iii. Technology ease household activities

Automated devices like washing machine, microwave oven, robotic cleaner, dish washer etc has made the life of women a little less hectic to deal with their housekeeping chores. Now these days there are so many websites available with online options to provide immediate services for plumbing, electrical issues, vehicle services, getting servants online, gardening services and many more these services once getting booked will reach to their doorstep at the scheduled time and the service is done in the required duration helping women relax a bit at home. Shopping also is made easy may be its grocery or garments anything is available now in

finger tips as mobile , laptops and internet is widely available for use with easy touch screen facility.

With the introduction of advanced AI software, 2023 is going to witness some major changes in technology and it's the right opportunity for women in the workforce to learn, grow and outshine.

There are various appliances available in market to support women at kitchen. Smart kitchen appliances such as microwave ovens, multi cookers, refrigerators are becoming more common in urban houses , especially in those houses where the women are also working. LG released an electrifying new fridge with colour-changing panels and with many other freezing conditions to preserve the food items fresh.

Touch screen / smart fridges that can contain your whole communication hub for the family.

They can be used to check on what food is inside, which helps in saving electrical costs by reducing the need for the door being open. They can also tell you what is inside your fridge while you're out getting groceries so you can double check what else you need to grab. Touch screens are connected to the internet so you can quickly search for and display recipes.

Motion sensitive kitchen faucets:

Some faucets can turn on with a simple motion in front of them, others can be activated with a single touch. No longer dealing with dirty, food covered faucets is one step further towards a cleaner home.

i. Interactive / Smart Stoves.:

Now you can access recipes, social media accounts and more from the top of your stove. Forget getting out a paper recipe card and getting it covered in food, now with a few quick taps you can have everything you need right at your fingertips.

ii. Voice-controlled lighting:

With a simple voice command, you can dim the lighting, switch between cool or warm tones and of course: switch the lights on and off. This is a great way of using technology in the kitchen as it helps create mood and atmosphere whilst still being functional.

iii. Automated washing machine:

washing machine can automatically select the right cycle for your laundry and even measure exactly how much detergent to use. All you have to do is load the machine and you can use your phone to set it off whenever you're ready.

iv. Easy-Family communication:

Technology has enhanced the connect between the family members if its used properly. Working women can be in touch with their family members in case of emergency as they use mobile. They are quiet familiar in using video conferences , chats to keep in touch with their family.

v. Technology Increase Social Awareness:

Use of Social media is a trend in India. There are various apps that helps especially women like whatsapp to locate their position when they travel by their loved ones hence to keep them safe. The same way these media helps them to get connected with people and hence keep them happy and active. Women being part of various media helps to get updated with various opportunities and facilities for them which in turn helps in their progress.

vi. Women's improvement in Health and Hygiene

There are various applications available to improve health and hygiene of women in India, like ICT- based health information systems in rural areas provide an overview of all the prevailing diseases. Personal Health Information system (PHI), takes care of the health behaviours of rural women. PHI provide health related information to rural women, to increase their awareness about various health aspects of women [3]. The existing ICT- based health information systems in rural areas provide an overview of all the prevailing diseases.

Despite of the physical illness many women in rural area of India still undergo domestic violence and hence live in severe mental and psychological ill-health there are various projects available to support them as well like online and mobile assistance for women help line and various applications like Systematic Medical Appraisal Referral and Treatment (SMART) Mental Health project trained lay village health workers and primary care doctors to screen, diagnose and manage individuals with common mental disorders using an electronic decision support system.

vii. Use of Technology for Safety

There are various mobile applications which is meant for the safety of women as follows

- a. A mobile application named My Safeti-pin was released in India on 9th March 2016 which runs on Android and Apple's IOS operating system which can locate the location of the person who is using it, using Global Positioning System hence it is easy to track and adds to the safety of women if they use it.
- b. There is another similar kind of app available in market which currently works as mobile app named FEMME. This app can be later modified to be embedded in jewelries, health bands or any other things used by women. FEMME will also be activated with a button press and an alarm will be initiated to the nearest police station and inbuilt camera and sensors to record and locate the user.
- c. There are other women safety system which uses Radio Frequency Identification (RFID) and Global positioning system (GPS). In this an active RDIF tag is used with RDIF reader which scan information and send the information to 5 people whose details are stored in the database by the AT89C52 microcontroller. Once the information is received by the controller, it sends the message to the contacts through GSM module and the location is tracked through the GPS.
- d. An android application is build on a smart band is conceptualized for the safety of women, by tapping twice on the screen to activate it and the device starts sending the GPS location to the ICE contacts and police control rooms. A pulse rate sensor

embedded in the device sense the pulse rate and a temperature sensor senses body temperature of the person. A force sensor is also embedded in the band which gets activated if the band is thrown and it immediately sends the current location of the victim to the ICE contacts. Within 2 minutes of its activation a Piezo buzzer siren will also ring to get public notice as the buzzer is of 80-110 dB which will be audible to 50 feet long. An electric shock circuit is designed that emits electric current when the two metal points on the top of the band come in contact with any surface or anybody. Until the device is turned off it will send the location on every 5 minutes of interval and will keep on beeping continuously.[6]

DISCUSSION

As women shoulder both the responsibility of working at office and at home they get less time to upgrade their skills, which may result in lay off. They may often undergo sexual harassment at work place. Overcrowded public transport also contribute circumstances to physically harass women. At work place a woman may also have to face superiors who demands sexual favours in return. If refused the superior can easily take a revenge on them during their appraisal. On the other hand if a woman is praised and appreciated for her work or promoted, her colleagues may do her character assassination. Any of these situations may lead to quitting her job.

CONCLUSION

The primary goal of women empowerment is to make her safe and to ensure that every woman in our society get proper education, job and to help them maintain their health and well being. Working women in India especially those who work in night shift do not feel safe due to the various incidents happened on violence against women such as those happened at Delhi - Nirbhaya, and one at Hyderabad to name a few. Hence the apps mentioned above can make them feel more confident and instill courage in them to continue in their current jobs & roles rather than quitting their jobs and leaving their dreams and aspirations unfulfilled due to such safety and security reasons.

All the problems that women face are due to the social perspective of the position of women in India. Traditionally men are considered as the head of the family and women as the one who takes care of house and children. This family model act as an obstacle before the working women. A fundamental change and transformation is required at the grass root level in the attitudes and mind sets of the employers, policy makers, family members and other relatives and the public at large to be more considerate and empathetic towards women in a conservative and a very gender biased society and social set up that we all are a part of. Walking the talk of women empowerment, equal opportunities and gender diversity at every level coupled with technological disruption and advancement for a positive change and greater good of women at large is the need of the hour.

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Relevance of SWOT and PESTLE Analysis: A Case Study Of Mc Kinsey

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Abstract

SWOT analysis and PESTLE analysis are pivotal tools in strategic management, aiding organizations in comprehensively evaluating their internal and external environments. SWOT, an acronym for Strengths, Weaknesses, Opportunities, and Threats, focuses on internal factors within an organization. It enables a structured examination of an organization's strengths and weaknesses, facilitating the identification of areas for improvement or optimization, and the exploration of opportunities or potential threats. On the other hand, PESTLE analysis considers external factors—Political, Economic, Social, Technological, Legal, and Environmental. This framework provides a holistic understanding of the external landscape in which an organization operates. By analyzing these external factors, businesses can anticipate challenges, exploit opportunities, and stay abreast of industry trends.

Together, SWOT and PESTLE analyses form a comprehensive strategic assessment toolkit. They complement each other by offering a dual perspective, ensuring organizations have a nuanced understanding of their current standing and future prospects. This informed perspective is crucial for effective decision-making, risk management, and long-term planning. By integrating these analyses into their strategic processes, organizations can align their resources and strategies with the dynamic forces shaping their industries, fostering adaptability and resilience in an ever-evolving business landscape.

Keywords: SWOT analysis, PEST analysis, McKinsey, management consulting, industry analysis, strategy development.

Introduction

Management consulting is a practice that helps organizations improve their performance and achieve their goals through the use of strategic planning, problem-solving, and organizational development. One of the key areas of focus for management consulting is industry analysis, which involves understanding the competitive landscape, market trends, and industry dynamics that affect a company's performance.

Industry analysis is essential for companies looking to stay competitive and identify opportunities for growth. Management consultants use various tools and techniques to conduct industry analysis, including market research, competitor analysis, and SWOT (strengths, weaknesses, opportunities, and threats) analysis.

Market research involves gathering and analyzing data on market size, growth trends, and customer behavior. Competitor analysis involves examining the strengths and weaknesses of key competitors in the industry, as well as their strategies and positioning.

SWOT analysis involves identifying the strengths and weaknesses of the company, as well as the opportunities and threats presented by the industry and market environment. This helps companies develop strategies to leverage their strengths, address their weaknesses, capitalize on opportunities, and mitigate threats.

Overall, industry analysis is a critical component of management consulting, helping companies develop effective strategies and stay ahead of the competition.

Competitors

1. Boston Consulting Group
2. Bain And Company
3. KPMG
4. A.T. Kearney
5. Ernst & Young
6. Oliver Wyman
7. PWC
8. Goldman Sachs
9. Capgemini
10. Deloitte

Literature Review

SWOT

The marketing consulting industry has undergone significant changes in the past few years, and is expected to continue evolving in the future. Here is an overview of the industry's health in the past, present, and future:

Past:

In the past, the marketing consulting industry was primarily focused on traditional marketing tactics such as advertising, public relations, and event marketing. (Dwivedi et al., 2023) However, with the advent of digital marketing, the industry began to shift towards more data-driven strategies and digital marketing channels.

The COVID-19:

Pandemic has had a significant impact on the marketing consulting industry. In the early stages of the pandemic, many businesses reduced their marketing budgets or put their marketing efforts on hold altogether. This led to a decrease in demand for marketing consulting services and a slowdown in the industry.

However, as the pandemic continued and businesses adapted to the new normal, there was a shift toward digital marketing channels and a greater emphasis on e-commerce. This led to an increased demand for marketing consulting services that focused on digital marketing, e-commerce, and social media marketing.

In response to the pandemic, marketing consulting firms have had to pivot their services to meet the changing needs of their clients. Many firms have started offering virtual consulting services and webinars to help businesses adapt to the new marketing landscape. They have also provided guidance on crisis communication and how to communicate effectively with customers during the pandemic.

Despite the challenges posed by the pandemic, the marketing consulting industry has shown resilience and adaptability. As businesses continue to navigate the ongoing effects of the pandemic, the need for marketing consulting services is likely to remain strong, with a focus on digital and e-commerce strategies.

Now:

Today, the marketing consulting industry is rapidly evolving to keep up with the latest technological advancements and changing consumer behavior. There is a growing focus on digital marketing, social media marketing, and mobile marketing, as well as a greater emphasis on customer experience and data analytics. Marketing consulting firms are also increasingly offering specialized services such as search engine optimization (SEO), content marketing, and influencer marketing.

Future:

Looking ahead, the marketing consulting industry is expected to continue to evolve and adapt to new trends and technologies. Artificial intelligence, virtual and augmented reality, and voice search are all emerging trends that are likely to impact the industry in the future. Additionally, there is a growing demand for marketing consulting services that focus on sustainability, social responsibility, and ethical practices.

Overall, the marketing consulting industry is in a healthy state, with a strong demand for services from businesses of all sizes and industries. However, the industry will need to continue to innovate and adapt to stay ahead of the curve and provide value to clients in the ever-changing marketing landscape.

Dream company health

McKinsey & Company is one of the world's leading management consulting firms, serving clients in a wide range of industries. Here is an overview of the company's health in the past, during COVID-19, and the future:

Past: McKinsey & Company has a long history of success in the management consulting industry. Founded in 1926, the company has grown to become one of the most prestigious consulting firms in the world, with a reputation for providing high-quality services to clients across industries.

COVID-19: Like many other consulting firms, McKinsey & Company has been impacted by the COVID-19 pandemic. The pandemic has caused significant disruption to many industries, and McKinsey has had to adapt its services to meet the changing needs of its clients. McKinsey has provided guidance to clients on crisis management, risk mitigation, and remote work, among other areas.

Now: Despite the challenges posed by the pandemic, McKinsey & Company remains a major player in the management consulting industry. The company has continued to provide high-quality services to clients, and has expanded its offerings to include areas such as sustainability and digital transformation. McKinsey has also made efforts to increase diversity and inclusion within the firm.

Future: Looking ahead, McKinsey & Company is well-positioned to thrive in the management consulting industry. The company has a strong brand and reputation, a global presence, and a talented team of consultants. McKinsey is likely to continue to adapt to new trends and technologies and may expand its offerings to include areas such as artificial intelligence and data analytics.

Overall, McKinsey & Company has a strong history of success in the management consulting industry and is well-positioned to continue to thrive in the future. While the COVID-19 pandemic has posed challenges for the firm, McKinsey has shown resilience and adaptability and is likely to continue to be a major player in the industry for years to come.

Company Profile

Profile: McKinsey & Company is a global management consulting firm that provides services to clients in various industries, including healthcare, financial services, energy, and more. The company is known for its expertise in strategy, digital transformation, operations, and organizational consulting.

History: McKinsey & Company was founded in 1926 by James McKinsey, a University of Chicago professor who had a vision to apply accounting principles to management. Over the years, the firm grew in size and expanded its services to include a wide range of consulting offerings. Today, McKinsey operates in over 130 cities worldwide and is one of the largest and most prestigious consulting firms in the world.

Our purpose, mission, and values :To help our clients make distinctive, lasting, and substantial improvements in their performance and to build a great firm that attracts, develops, excites, and retains exceptional people.

Products: McKinsey offers a wide range of consulting services to its clients, including strategy consulting, digital transformation, operations consulting, organizational consulting, and more. The firm's services are designed to help clients improve their performance, achieve their goals, and navigate complex business challenges.

Market Presence: McKinsey & Company has a strong global presence, with operations in over 130 cities across the world. The firm serves clients across a wide range of industries, including healthcare, financial services, energy, and more. McKinsey has a reputation for providing high-quality services to clients and attracting top talent.

Sustainability: McKinsey has made sustainability a core focus of its business strategy. The firm has set ambitious sustainability goals for its operations and is committed to helping clients achieve their sustainability goals. McKinsey also offers sustainability consulting services to clients, including support for sustainability strategy development, implementation, and monitoring.

Innovation: McKinsey has a strong focus on innovation, and invests heavily in research and development to stay ahead of the curve. The firm is known for its use of data-driven insights and analytics to inform its consulting services, and has made significant investments in technology and digital transformation. McKinsey also has a dedicated innovation team that works to develop new consulting offerings and approaches.

Overall, McKinsey is known for its expertise in a wide range of industries and functional areas, as well as its focus on data-driven insights and analytics. McKinsey is one of the largest and most prestigious consulting firms in the world, with a reputation for providing high-quality services to clients and attracting top talent.

Research Methodology

SWOT Analysis

What is Swot Analysis?

SWOT analysis is a strategic planning tool used by businesses and organizations to assess their current position and develop strategies for the future. The acronym SWOT stands for Strengths, Weaknesses, Opportunities, and Threats. Here's a brief explanation of each component:

1. Strengths:

These are the internal attributes and characteristics that give an organization a competitive advantage or set it apart from others. Strengths can include resources, skills, expertise, brand reputation, and any other positive factors that contribute to the organization's success.

2. Weaknesses:

Weaknesses are also internal factors but represent areas where the organization may be lacking or facing challenges. These can include inefficiencies, lack of certain resources, poor management, or any internal factors that hinder the organization's performance.

3. Opportunities:

Opportunities are external factors or circumstances that the organization can capitalize on to achieve its goals. These may include market trends, emerging technologies, new customer segments, or favorable changes in the business environment.

4. Threats:

Threats are external factors that pose risks or challenges to the organization. These can include economic downturns, competition, regulatory changes, natural disasters, or any other external factors that could negatively impact the organization.

The main purpose of a SWOT analysis is to identify and prioritize these four categories to help the organization make informed decisions and develop a strategic plan. By understanding their strengths and weaknesses and recognizing potential opportunities and threats, businesses and organizations can create strategies that leverage their strengths, address their weaknesses, seize opportunities, and mitigate or manage threats effectively.

SWOT analysis is a versatile tool used in various contexts, including business, marketing, project management, and personal development, to make informed decisions and set strategic goals. It provides a structured framework for understanding the current situation and planning for the future.

Why Swot analysis?

SWOT analysis is a vital tool for organizations, serving multiple purposes. It aids in strategic planning, decision-making, and identifying competitive advantages. It helps manage risks, fosters innovation, aligns stakeholders, and allows for ongoing evaluation and adaptation. In essence, SWOT analysis empowers organizations to make informed decisions, leverage strengths, address weaknesses, seize opportunities, and manage threats effectively.

Strengths:

Reputation: McKinsey has a strong reputation for providing high-quality consulting services to clients and attracting top talent.

Global Presence: McKinsey operates in over 130 cities worldwide, giving it a strong global presence.

Expertise: McKinsey is known for its expertise in a wide range of industries and functional areas, including strategy, operations, and digital transformation.

Innovation: McKinsey invests heavily in research and development to stay ahead of the curve and offers innovative consulting services.

Weaknesses:

Cost: McKinsey's consulting services can be expensive, which may limit its market reach.

Limited Diversity: McKinsey has faced criticism in the past for its lack of diversity, which may impact its ability to attract and retain top talent.

Client Dependency: McKinsey's revenue is highly dependent on a small number of large clients, which may increase its risk exposure.

Opportunities:

Emerging Markets: McKinsey could expand its operations in emerging markets, where demand for consulting services is growing.

Digital Transformation: McKinsey could expand its services in the digital transformation space, where there is significant demand from clients.

Sustainability: McKinsey could expand its services in the sustainability space, which is becoming an increasingly important issue for clients.

Threats:

Competition: McKinsey faces competition from other consulting firms, which may impact its market share.

Economic Downturns: Economic downturns could impact demand for consulting services, which could impact McKinsey's revenue.

Regulatory Changes: Changes in regulations could impact the industries that McKinsey serves, which could impact demand for its consulting services.

Conclusion:

McKinsey & Company is a leading global management consulting firm with a strong reputation, global presence, and expertise in a wide range of industries and functional areas. Its strengths include its reputation, global presence, expertise, and innovation, while its weaknesses include its cost, limited diversity, and client dependency. The firm has opportunities to expand in emerging markets, digital transformation, and sustainability, but also faces threats from competition, economic downturns, and regulatory changes. Overall, McKinsey & Company has a solid foundation and is well-positioned to continue providing high-quality consulting services to clients around the world, but must address its weaknesses and capitalize on its opportunities to remain competitive in an evolving marketplace.

PESTEL Analysis

Here is a PESTLE analysis of McKinsey & Company:

Political Factors:

Government regulations and policies can impact McKinsey's clients, which in turn may impact demand for the firm's consulting services.

Changes in government policies related to business practices, taxation, and labor laws can also impact the firm's operations.

Economic Factors:

Economic downturns can impact demand for consulting services and potentially limit McKinsey's revenue growth.

Changes in global economic conditions, such as trade policies or inflation rates, can also impact the firm's operations.

Social Factors:

Changing social trends, such as shifting consumer preferences or demographic changes, can impact McKinsey's clients and their needs for consulting services.

The firm's reputation and social responsibility practices can also impact its ability to attract and retain top talent.

Technological Factors:

Advancements in technology can create new opportunities for McKinsey to offer innovative consulting services, but also require the firm to invest in new technologies and skills to remain competitive. The rise of artificial intelligence and automation may impact demand for certain consulting services.

Legal Factors:

Changes in laws and regulations related to business practices, intellectual property, or data privacy can impact McKinsey's operations and its clients' needs for consulting services. Legal challenges related to the firm's practices or reputation can also impact its brand image and revenue growth.

Environmental Factors:

McKinsey's operations and its clients' industries may be impacted by climate change and environmental regulations, creating new opportunities and challenges for the firm's consulting services. The firm's sustainability practices can impact its reputation and ability to attract and retain clients and talent.

Conclusion:

McKinsey & Company operates in a complex and dynamic business environment that is influenced by various political, economic, social, technological, legal, and environmental factors. The firm's ability to adapt to changes in these factors and offer innovative and sustainable consulting services to clients will determine its long-term success. While the firm has a strong reputation, expertise, and global presence, it must also stay ahead of the curve and invest in new technologies and skills to remain competitive. Additionally, it must prioritize social responsibility and sustainability to maintain its reputation and attract top talent and clients.

Porter's Five Force Analysis**Introduction:**

Porter's Five Forces analysis is a framework for assessing the competitiveness and profitability of a business or industry. In this case, we will use the framework to analyze McKinsey & Company's consulting industry.

Porter's Five Forces analysis includes five factors that influence competition in an industry:

- The bargaining power of buyers
- The bargaining power of suppliers
- The threat of new entrants
- The threat of substitutes
- The intensity of competitive rivalry

The bargaining power of buyers:

The bargaining power of buyers in McKinsey's consulting industry is relatively high. Clients have many options to choose from when it comes to consulting firms, and they have access to

information that allows them to compare the services and prices of different firms. Clients also have the power to negotiate fees and contracts with McKinsey and other consulting firms.

The bargaining power of suppliers:

The bargaining power of suppliers in McKinsey's consulting industry is low. The primary inputs for consulting services are skilled professionals, which are widely available in the market. McKinsey and other consulting firms have the power to attract and retain top talent through competitive salaries, benefits, and training programs.

The threat of new entrants:

The threat of new entrants in McKinsey's consulting industry is low to moderate. Consulting services require significant expertise and resources to deliver high-quality services. New entrants would face challenges in establishing their brand, reputation, and client base, which could limit their ability to compete with established firms like McKinsey.

The threat of substitutes:

The threat of substitutes in McKinsey's consulting industry is moderate. Clients have access to a wide range of consulting services, including in-house consulting teams, freelance consultants, and other consulting firms. However, McKinsey's reputation, expertise, and range of services can differentiate it from other consulting firms and make it less likely for clients to switch to substitutes.

The intensity of competitive rivalry:

The intensity of competitive rivalry in McKinsey's consulting industry is high. McKinsey faces significant competition from other consulting firms, including traditional management consulting firms, technology consulting firms, and boutique consulting firms. McKinsey's reputation, expertise, and range of services are key factors that can differentiate it from competitors and give it a competitive advantage.

Conclusion:

Overall, McKinsey & Company operates in a highly competitive industry where clients have significant bargaining power, but suppliers do not. The threat of new entrants is moderate, but McKinsey's reputation and brand recognition make it challenging for new entrants to establish themselves. McKinsey also faces moderate competition from substitutes, but its range of services and expertise give it a competitive advantage. Finally, the intensity of competitive rivalry is high, but McKinsey's reputation, expertise, and range of services can differentiate it from competitors and give it a competitive advantage.

You and The Dream Company

There are several compelling reasons why one might consider McKinsey & Company as a dream company to work for:

Notoriety and reputation: McKinsey is one of the most well-known and esteemed names in the management consulting business. An opportunity for both professional and personal growth can be found working for a company with such a solid reputation. It can also be very gratifying and respectable.

Impactful work: McKinsey & Company is known for working with some of the most influential companies and organizations in the world. Working at McKinsey means you have the opportunity to work on high-impact projects that have the potential to change the trajectory of a company or industry.

Professional development: McKinsey invests heavily in the professional development of its employees. The company provides extensive training programs, mentorship opportunities, and support for continuing education. Working at McKinsey can provide you with unparalleled opportunities to learn and grow professionally.

Collaborative culture: McKinsey places a high value on collaboration and teamwork. The company fosters a culture of collaboration, where employees are encouraged to work together to solve complex problems.

Diversity and inclusion: McKinsey is committed to creating a diverse and inclusive workplace. The company has made significant progress in recent years in increasing diversity among its employees, particularly in leadership positions.

Global reach: McKinsey operates in over 130 cities around the world. Working at McKinsey means you have the opportunity to work with colleagues and clients from all over the world, gaining exposure to different cultures and business practices.

Compensation and benefits: McKinsey offers competitive compensation and benefits packages. The company also provides extensive support for employee well-being, including flexible work arrangements and mental health resources.

Overall, working at McKinsey & Company can provide you with unparalleled opportunities for professional development, impactful work, and exposure to a diverse range of industries and cultures. These factors, combined with the company's commitment to diversity and inclusion and support for employee well-being, make McKinsey a compelling choice for those looking for a dream company to work for.

JOB DESCRIPTION ANALYSIS

THE JOB

A Marketing Consultant at McKinsey & Company is responsible for providing strategic marketing advice and solutions to clients across a range of industries. Their job description may include the following tasks:

- Conducting market research and analysis to identify market opportunities and challenges, and developing insights into customer behavior and preferences.
- Developing marketing strategies and plans that align with client business goals and objectives, and identifying key performance indicators (KPIs) to measure success.

- Working with clients to implement marketing campaigns across multiple channels, such as digital, social media, traditional advertising, and events.
- Collaborating with cross-functional teams, such as product development, sales, and operations, to ensure marketing initiatives are integrated and aligned with business objectives.
- Providing thought leadership and insights to clients on emerging marketing trends, technologies, and best practices.
- Measuring the effectiveness of marketing campaigns and initiatives, and developing recommendations for continuous improvement.
- Managing project timelines, budgets, and deliverables to ensure projects are delivered on time and within budget.
- Building and maintaining strong relationships with clients, and serving as a trusted advisor on marketing strategy and execution.

In summary, a Marketing Consultant at McKinsey & Company is responsible for developing and implementing marketing strategies that help clients achieve their business goals and objectives, and for providing thought leadership and insights on emerging marketing trends and best practices.

REQUIREMENTS

Education: A bachelor's or master's degree in marketing, business, or a related field is usually required.

Experience: Relevant work experience in marketing or consulting is highly preferred. Candidates should have experience in developing and implementing marketing strategies, conducting market research, and analyzing data.

Skills: Strong analytical and problem-solving skills, excellent communication and presentation skills, and the ability to work collaboratively with clients and colleagues are essential for this role.

Travel: Depending on the project requirements, marketing consultants may need to travel frequently.

SKILLS

Analytical skills: A Marketing Consultant should have strong analytical skills to interpret data, analyze market trends, and make data-driven recommendations.

Communication skills: Effective communication skills, both written and verbal, are critical for this role. A Marketing Consultant should be able to communicate complex ideas in a clear and concise manner.

Collaboration: A Marketing Consultant should be comfortable working with cross-functional teams and have the ability to build strong relationships with clients.

Digital marketing skills: A Marketing Consultant should have a good understanding of digital marketing channels and be able to develop and implement digital marketing strategies.

Project management: Strong project management skills are essential for this role, including the ability to manage timelines, budgets, and deliverables.

Overall, a Marketing Consultant at McKinsey & Company should possess a combination of strong analytical, communication, collaboration, and project management skills, along with relevant education and work experience in marketing or consulting.

URVASHI JOHRI:

As a competent and committed professional with 2 years of experience in this dynamic industry, I possess the skills and knowledge necessary to excel in this role. I am a self-motivated individual who thrives in collaborative environments and is equally comfortable working independently to achieve our shared goals.

To me, achieving excellence in performance is not just about meeting targets, but also about fostering strong client relationships that drive sustainable growth. That's why I place a premium on my superior valuation modeling skills, which enable me to analyze complex data sets and provide informed insights that drive business outcomes.

I firmly believe that success is not a solo pursuit, but a collaborative effort that requires dedication, creativity, and a deep understanding of the industry. As a Marketing Consultant, I am eager to bring my passion for marketing and customer care to the table and leverage my expertise to drive tangible business outcomes.

In conclusion, I am committed to advancing your organization's objectives, while also developing my own skills and expertise to grow as a marketing professional.

VISHAL VERMA:

As a business owner, I understand the importance of effective communication and customer dealings. During my time running my father's business, I learned firsthand how to build and maintain strong relationships with clients, and how to provide exceptional customer service that goes above and beyond their expectations.

Perhaps even more valuable, however, is the experience I gained in handling critical situations in a business. As an entrepreneur, I faced numerous challenges, from unexpected financial setbacks to supply chain disruptions. Through these experiences, I learned how to remain calm under pressure, think creatively to find solutions, and adapt to rapidly changing circumstances. I am committed to bringing my unique perspective and expertise to the table, and to working collaboratively with your team to drive tangible business outcomes.

JOB FIT

Desired Skills/Job Requirements:

As an applicant for the job, I confidently assert that I possess the necessary skills to perform exceptionally well in the role. In addition, I am proficient in MS Word, Excel, and PowerPoint, and I am committed to utilizing online resources to efficiently assimilate new information and acquire the requisite knowledge and expertise to excel in my career.

Further matching details:

My colleagues have lauded my presentations for their high level of professionalism, particularly when I utilized PowerPoint and Excel to create them. With this in mind, I am confident that I will be able to leverage my skills and abilities to deliver exceptional work performance.

Positivity that ensures employment success:

To facilitate my ability to work creatively, I have a keen eagerness to learn and explore new things. Additionally, I excel at managing work pressure and thrive in collaborative environments where I can support my colleagues. I am always willing to lend a hand in assisting them to learn and assimilate new information to accomplish our shared goals.

JD Takeout

The key takeaways from the job description of a Marketing Consultant working at McKinsey & Company are:

- A Marketing Consultant is responsible for providing strategic marketing advice and solutions to clients across various industries.
- The role involves conducting market research, developing marketing strategies, and implementing marketing campaigns across multiple channels.
- Collaboration with cross-functional teams and managing project timelines and budgets are essential skills for this role.
- A Marketing Consultant must possess strong analytical, communication, collaboration, and project management skills, along with relevant education and work experience in marketing or consulting.
- This role requires a good understanding of digital marketing channels and emerging marketing trends, as well as the ability to measure the effectiveness of marketing campaigns and provide recommendations for improvement.
- Building and maintaining strong relationships with clients and serving as a trusted advisor on marketing strategy and execution is a key aspect of the role.

CONCLUSION

After an extensive analysis of McKinsey & Company, one of the foremost names in management consulting, this assignment has offered valuable insights into the firm's operations, covering SWOT, PESTLE, and Porter's Five Forces analyses. These assessments have helped us understand McKinsey & Company's strengths, weaknesses, opportunities, and challenges, along with its market presence and sustainability practices. Furthermore, we have delved into the

Marketing Consultant's job description, skills, and requirements, providing a glimpse into the role's demands and expectations.

Overall, McKinsey & Company stands out as an esteemed consulting firm that fosters a compelling work culture, engaging assignments, and a range of development opportunities. The firm values its employees, nurturing a collaborative work environment that encourages learning and taking on novel challenges. With a global footprint and a reputation for excellence, McKinsey & Company presents a coveted destination for those aspiring to a career in consulting.

By analyzing McKinsey & Company's business model, culture, and employment prospects, this assignment has enabled us to understand the crucial competencies essential to thriving in the consulting industry. As a result, it equips aspiring consultants with a roadmap to making informed decisions about their careers, facilitating their progress towards achieving their objectives.

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E-commerce and New Perspectives

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ABSTRACT:

E-commerce is the new trend that helps businesses to stay in the boat of uncertainties. With the rise in technology, it becomes an utmost need to walk with the pace of time. In recent years, we have seen how online retailing has taken a rise by easing the process of buying and doing payments. It is always said that if one doesn't adapt to the changes of time, one fails to achieve bigger goals. It's rightly subjected in terms of going bricks to clicks. E-commerce has not only helped small business to boost their reach to larger audience but also has made a comfortable seat for customers by providing larger variety of products and services and making it available at their doorstep. The ways it can help businessmen and businesswomen are surreal yet achievable. It opens the gates for feasible analysis of audience and makes business's products and services reach the target audience at affordable cost.

The use of e-commerce has been influenced by changes in times. It has evolved with new trends and demands. In recent times, it is carried by the use of many tools, apps, and sites which makes businesses boost their presence.

In his paper, I have discussed E-commerce and its new perspective i.e. how social media apps impacts the growth of E-commerce.

KEYWORDS : E-commerce, Social media, Marketing, Evolution of e-commerce, Evolution of social media.

INTRODUCTION:

In the most simplified way Business is defined as the transaction of goods and services against the same or like money in modern times. Over the years, the mode of businesses took rapid transformation. From the era, way back in 6000BC, it was seen how tribes of Mesopotamia were most likely with barter system and how Phoenicians observed the procedure and incorporated it into their culture. These prehistoric humans traded goods for the food, tools, and spices. After countless innovations and improvements, we have reached a point where we are no longer just trading things and services for money or currency. Instead, we have discovered a means to settle the account via technology. Through the use of technology, individuals have created systems that enable businesses to function successfully and even during crises The progress of technology is clearly inevitable. Technology has empowered human race to have easy ways to complete any task. E-commerce expanded as electronic commerce is

distinct example of use of technology in the most profitable way. With the years of advancements in finding the ways of using e-commerce in its best form, people have explored all the tools and platforms that boost the business. Social Media is the one form and the new perspective which is used nowadays to uplift e-commerce. Social Media platforms are the means to showcase the products of businesses in more better ways to larger audiences.

OBJECTIVE:

To study growth of e-commerce in past years.

To study how use of social media helps boost e-commerce.

RESEARCH METHODOLOGY :

This research mainly focuses on learning how E-commerce have grown in past years and how modern days innovations have impacted the growth of e-commerce. Here, I have tried to show how social media platforms and their tools have impacted e-commerce.

This research paper includes following types of research methodology :

1. Fundamental Research :

Fundamental research (or academic research) is “experimental or theoretical works mainly performed to obtain new knowledge on the basics of observable phenomena or facts, without prior consideration that it will result in any practical application or use”.

2. Analytical Research:

Analytical research is a specific type of research that involves critical thinking skills and. the evaluation of facts and information relative to the research being conducted. Common approaches used for conducting research :

3. Qualitative Research:

Qualitative research involves the studied use and collection of a variety of empirical

materials – case study, personal experience, introspective, life story, interview, observational, historical, interactional, and visual texts – that describe routine and problematic moments and meanings in individuals' lives.

Origin of e-commerce :

E-commerce, often known as electronic commerce, is the act of purchasing and selling products or services online. For online customers and sellers, it includes a wide range of information, platforms, and resources, such as mobile shopping and encryption for online payments. Nowadays, majority of businesses uses an online store and/or platform to manage logistics and fulfilment, undertake e-commerce marketing and sales operations, and more. Most

of us find it difficult to envision modern living without e-commerce. It would not only be a hassle, but also a lot more difficult.

Even still, despite how much of a part of our lives e-commerce has become, it wasn't always the case. When "tel-shopping," the forerunner to the present form of e-Commerce, first debuted roughly 40 years ago, we were able to pinpoint its beginnings. The development of the internet and e-commerce have a long shared history. The public launch of the internet in 1991 made online buying possible. Thousands of firms have subsequently started selling things online, with Amazon being one of the first e-commerce sites in the US to do so.

E-commerce was originated way back in 1979 when English inventor Michael Aldrich, introduced and pioneered by connecting television and telephone lines. He got this idea when he and his wife were on a walk, lamenting the fact of frequent market visits. "What if you could simply order what you needed through the TV? Wouldn't that be so much simpler?", she said. Soon after, he created a method for television advertisements of goods and services that allowed viewers to place orders by calling a call center. Aldrich referred to his method as "teleshopping." And here e-commerce was born. Aldrich was able to use a telephone connection to link a customised home television to a real-time multi-user transaction processing computer. In 1980, the system was promoted and made available as a business-to-business system. It was later sold in the UK, Ireland, and Spain. And there began the rise of e-commerce. Technically, Boston Computer Exchange, which debuted in 1982, was the first e-commerce business. People who wished to sell their used computers could do so primarily on the internet. Another, more well-known type of store made its appearance with the introduction of the Internet. Book Stacks Unlimited was an online bookshop that launched in 1992, two complete years before Amazon, a firm that would go on to swiftly become synonymous with the phrase. Eventually, Barnes & Noble bought Book Stacks Unlimited.

E-commerce journey :

Around three decades have passed since the introduction of electronic commerce, and during that time, the methods of purchasing and selling items have undergone significant change. The nature, timing, and technology of both business-to-business (B2B) and business-to-consumer (B2C) commerce are changing as a result of its ongoing growth. This has an impact on consumer behaviour in developed economies across the globe as well as pricing, product availability, inventory holding, and transportation patterns. Since the establishment of CompuServe in 1969, e-commerce has advanced significantly. E-commerce is expanding and shows no signs of slowing down, driven by improvements in technology and global conditions. By 2023, online retail sales are projected to account for 22% of all retail sales worldwide, up from 14.1% in 2019. Digital wallets are predicted to handle more than half of all e-commerce payment volumes by 2024.

By 2022, Amazon will control approximately \$2 of every \$5 spent online, or 39.5% of all US retail e-commerce sales. Since the mid-1990s, when companies like Amazon, Alibaba, and others were established, online marketplaces have grown significantly.

Particularly Amazon is renowned for its distinctive growth strategy, which has aided in their widespread acceptance and record-breaking sales. They have been able to fast expand up through innovation and optimisation on the move because they provide clients with a wide

variety and an unmatched level of ease.

However, Amazon does not act alone in this. 56% of Amazon's paid units were sold by third-party sellers in the fourth quarter of 2021. (i.e. not Amazon).

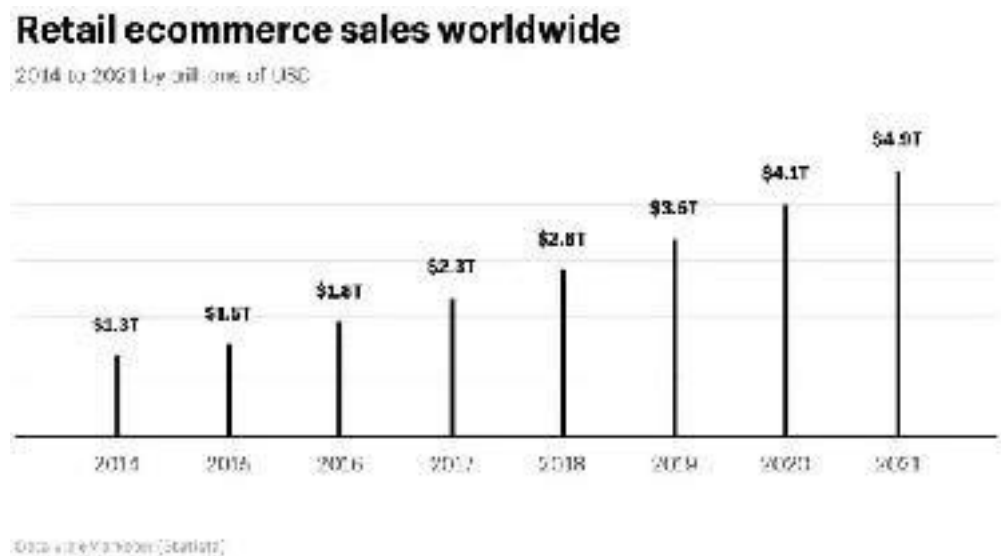


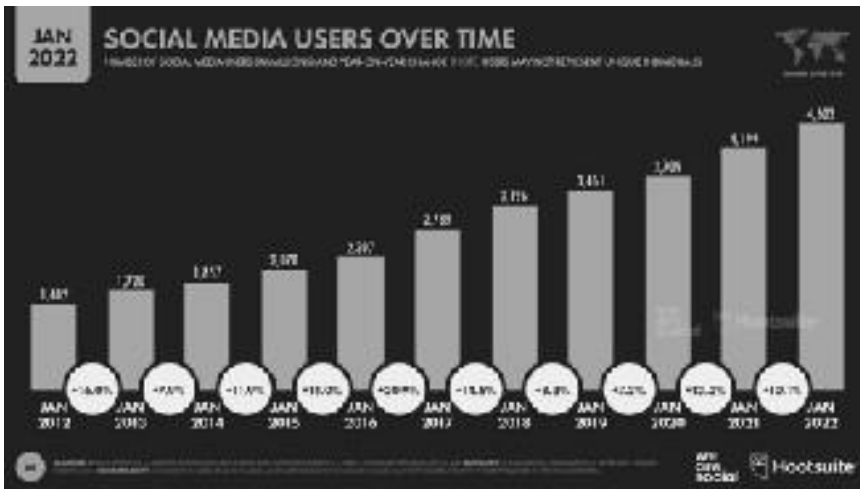
FIG. IV. 2. A. | Image Source: Shopify Plus | Global eCommerce market size: Retail e-commerce sales worldwide.

Social media outbreak and its growth :

Social media has changed significantly in less than a generation, going from direct electronic information exchange to virtual community, shopping platform, and essential 21st-century marketing tool. On May 24, 1844, a handwritten pattern of electronic dots and dashes sent across a telegraph system served as the first social media platform. Despite the long history of digital communication, the ARPANET, a network developed by the Advanced Research Projects Agency, is generally cited as the source of today's internet and social media. The US Department of Defence built an early digital network that allowed researchers at four affiliated colleges to exchange software, hardware, and other data. The National Science Foundation launched the NSFNET in 1987, a more robust, countrywide digital network that served as the direct forerunner to today's internet. In 1997, ten years later, the first real social networking platform was introduced. The expansion of the internet in the 1980s and 1990s made it possible for online communication services like CompuServe, America Online, and Prodigy to be launched. Through email, message boards, and live online chat, they exposed consumers to digital communication.

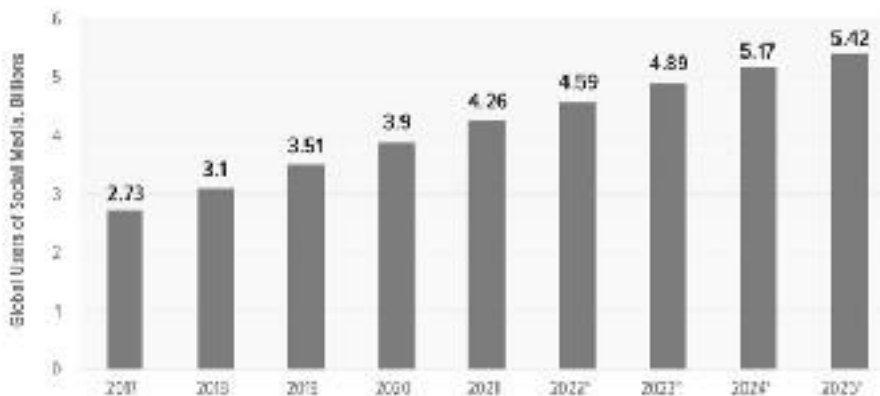
The early social media networks were born out of this, starting in 1997 with the short-lived Six Degrees profile uploading service. Friendster followed this service in 2001. Millions of users were drawn to these basic platforms, which allowed for the registration of email addresses and simple online networking. Friendster was the first true social network in the era of modern

social media. and had more than 100 million registered users, primarily in Asia. Users can find friends and widen their existing networks with Friendster. With less risk than in the real world, more new people could be securely met. To better enhance their services, they took a hiatus in 2015. As a networking platform for professionals with a focus on their careers, LinkedIn was created in 2002. More than 675 million people used it globally by 2020. Both job searchers and human resources managers looking for competent applicants continue to use it as their preferred social media platform. After seeing an initial surge of success, two additional significant forays into social media failed. Myspace was introduced in 2003. The ability for users to post new music directly on their profile pages contributed to it becoming the most popular website on the planet by 2006. Myspace was bought by musician Justin Timberlake for \$35 million in 2011, but it has since faded into the background of social media. In 2004, when Facebook was first introduced in Harvard, its history began. It expanded swiftly to other schools, and by 2008 it had established itself as the most well-known social media site. It is still expanding quickly today. It enables users to upload material and edit their profile information. It has developed numerous new features throughout time, increasing its appeal. Additionally, users had the option of adding various posts to their walls and using private messaging. It is even simpler for them to modify the account settings at their leisure. Marketers may now contact their audiences like never before thanks to the advertisements platform. In 2010, Instagram became available to the general public. Instagram connects people worldwide through visual communication and social interaction. Users can submit and distribute videos and photo stories. It has a variety of filters that can turn a plain photo into a masterpiece fit for Instagram.



4.6 BILLION PEOPLE WORLDWIDE ARE CONNECTED TO SOCIAL MEDIA PLATFORMS

Sources: Global X ETFs with information derived from: Dixon, S. (2022, July 26). Number of social media users worldwide from 2018 to 2027 (in billions). Statista; Kopos. (2022, July). Global social media statistics. Colateralcapital



Note: *Indicates forecasts.

FIG. IV. 3. B. | Image Source: Data reportal | Digital 2022 : Global overview report

Social media as a new perspective to e-commerce :

Social media plays a big part in assisting businesses. It enables the blending of social interactions on e-commerce sites and client communication. Its capacity to gather data aids in concentrating marketing initiatives and market research. By assisting businesses in establishing a stronger online presence, generating leads, and increasing traffic, social media plays a crucial role in online marketing. An effective social media strategy is crucial for the development and expansion of an e-commerce company. Because of its global commercial success, social media is growing in popularity. Social networking is an effective marketing strategy for e-commerce firms. It is quite helpful to be able to interact with customers and foster a feeling of community in addition to pointing them toward a new item or enticing promotion. In addition to having the back-end mechanisms in place to enable users to share products and recent purchases with friends and followers with just a single click, a comprehensive social media presence may also involve direct sales through some networks. Even though it might be challenging to quantify the immediate benefits of using social networks, such as asking followers questions and conversing with them, these actions assist to foster a sense of community and brand loyalty. These social media connections are significant in retaining clients and displaying a dedication to solving issues when it comes to handling customer service issues.

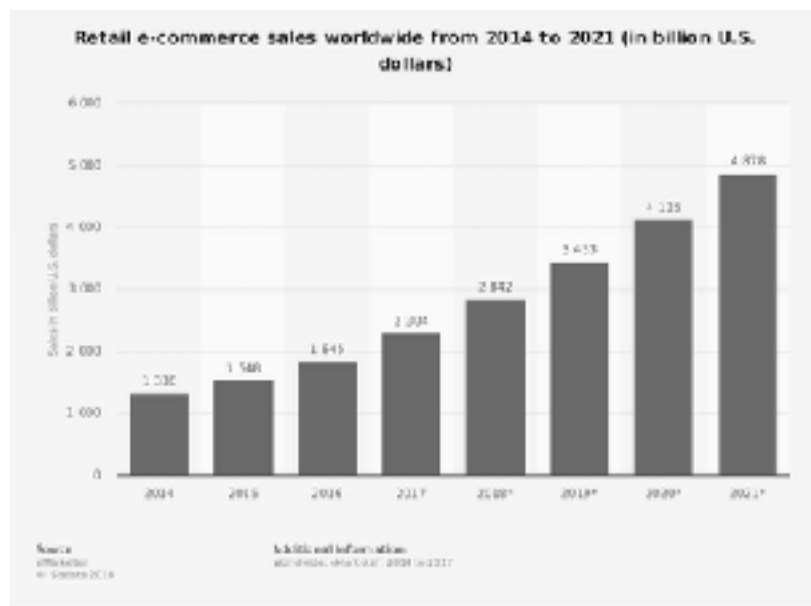


FIG. IV. 4. A. Image Source: Smart insights | Social commerce trends 2019

Benefits of using social media e-commerce:

Ecommerce social media is the technique of promoting an online store through social media. Social media may be used by e-commerce businesses to increase brand recognition, draw in online followers, and boost sales. Social media can be used by businesses to promote their online profiles, brands, and goods.

Following are the benefits of using social media for e-commerce :

Customer Interaction:

Social networking platforms give you the opportunity to interact not just with your audience and followers, but also with them directly. Sites like social media operate through two-way contact, unlike other traditional media. The ideal channel for responding to customer comments and messages and engaging your audience with relevant information is social media.

- **Targeted Advertising** : Using social advertisements is one of the most affordable ways to advertise e-commerce sites and distribute content. It helps us reach the correct audience, and provide a variety of targeting options that go within your budget.
- **Obtain Leads** : Customers can easily demonstrate their interest in brand on social media. One of the most important functions of social media for e-commerce is lead generation, for which the majority of ad formats are created. There are advertisements on Facebook, Instagram, and other platforms.
- **Boost Web Traffic** : Social media postings and advertisements are essential components that increase website traffic. You may upload several types of material to your social media platforms, including blog entries, offers, and discounts.
- **Promoting Brand Awareness** : Social media platforms like Facebook, Twitter, Instagram, Whats app, and others are used by more than half of the world's population, making it an obvious choice for targeting a niche audience. More than 83% of Instagram users, according to research, say they find new companies and goods on the app.

CONCLUSION:

The social media strategy for e-commerce and the criteria for success vary depending on the type of business. The usage of social media platforms will help achieve higher goals which is crucial to do it in a way that benefits your company. Making use of social media for primary point of contact with clients can not only help in drawing more leads, but also provides many of the previously mentioned benefits. Only by utilising the power of social media can e-commerce firms connect to a large crowd base and convert them to their customer base. The sooner business realise the importance of social the better the business grow.

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Redefining dining Services: A Case study On Rail Restro

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Abstract

Rail Restro is a mobile app that aims to transform the dining experience during train travel. Launched in 2015, the platform provides passengers with the convenience of ordering restaurant-quality meals right to their train seats. Whether you're travelling for business or leisure, Rail Restro ensures that you have access to a diverse menu of delicious and hygienic food options throughout your journey.

Key words: Rail Restro, dining services, train travel, mobile app, food delivery, hygiene, quality, diverse menu

Introduction

Rail Restro is a mobile app, which commenced its services in 2015. The app delivers delicious food for passengers in train. It provides different varieties of food which is more hygienic and tastier. It is located in Patna city, Bihar, India. This innovative platform provides convenience and quality, ensuring passengers can enjoy a satisfying meal during their journey.

Rail Restro's success lies in its commitment to providing high standards of hygiene and food quality through partnerships with reputable restaurants. The app's user-friendly interface and diverse menu cater to various tastes and preferences, making it a popular choice for passengers seeking a convenient dining solution while travelling by train. Additionally, the company's strategic plans for expansion and investment in logistics infrastructure demonstrate a focus on enhancing service efficiency and customer satisfaction.

Key Features:

Easy Ordering: The Rail Restro app offers a user-friendly interface, allowing passengers to browse through a variety of cuisines and place their food orders seamlessly.

Diverse Menu: From regional specialties to international cuisines, Rail Restro collaborates with a network of restaurants to offer a diverse menu that caters to different tastes and preferences.(Liberty et al., 2023)

Hygiene and Quality: Ensuring the highest standards of hygiene and food quality, Rail Restro partners with reputed restaurants to deliver fresh and tasty meals directly to your train compartment.(Setiawan, 2023)

Customized Packages: Passengers can choose from a range of meal packages, including breakfast, lunch, dinner, and snacks. Customization options are available to accommodate

transformations in management: unlocking the recent perspectives and drifts
dietary preferences and restrictions.

ISBN 978-81-963834-1-1

Delivery Coordination: Rail Restro coordinates with its partner restaurants to ensure timely delivery, making it convenient for passengers to enjoy a satisfying meal without leaving the comfort of their seats.

Order Tracking: Passengers can track their food orders in real-time through the app, providing transparency and peace of mind.

Feedback and Ratings: The platform encourages feedback from users, allowing them to rate and review their dining experience, contributing to the continuous improvement of services. Rail Restro is dedicated to enhancing the overall travel experience by addressing the culinary needs of train passengers, making it a go-to solution for those who seek quality meals during their rail journeys.

Evolution of Rail Restro:

Manish Chandra was the founder of Rail Restro. He started his business in 2015. Manish Chandra and his wife Suman Priya were dissatisfied with the quality of pantry food delivered during their train journey. Suman Priya proposed the idea of a food delivery service while travelling on wheels to her husband Manish Chandra. They organised tie-ups with restaurants within 5km radius of selected railway stations, to ease the delivery of food on demand within the stipulated time, the time when the train exactly stops by in a particular station. Currently rail restro app partners with almost 8000 plus premium restaurants within India and has delivered more than 60 lakhs plus meals and counting more in the meanwhile when you are reading.

From which location, month. First business line, cost and distribution system

2015:

Rail Restro company was founded by 'Manish Chandra' in 2015, with an aim to provide healthy and hygienic food to the Indian railway passengers.

2016:

Rail Restro has expanded its services to all the leading cities in India and Rail Restro got affiliated with IRCTC as an authorized food delivery venture.

2018, Manish Chandra has started 'Rail Mitra' app which aims at providing PNR searches, live running status, seat availability updates, train schedule, train fare as well as food for the Indian railway passengers. It is an integrated services app which is available for all Indian railway routes.

In 2020, Rail restro has expanded their services to 350+ railway stations approximately and has partnered with 7000+ plus premium restaurants.

2021, contactless food delivery system in the time of pandemic was established in a consumer support and health centric perspective.

2022, Rail restro is India's only largest food brochure site available through mobile app approved by FSSAI (Food Safety and Standards Authority of India). Rail restro is looking forward to the expansion of service to 450+ new railway stations in 2022. In addition, the app provides special food with nutritional value for diabetic, old people and children.

Revenue Model:

In 2015, the company ran on no profit for the initial 3 months, but in a no loss- no profit model. Later, reached a gross revenue of 6 crore and a net revenue of 1 crore in the financial year 2015-2016 in a period of.....months. In the financial year 2021-2022, the revenue generated by the company is \$17 million.

Business Model of Rail Restro:

The business Model of Rail Restro is a B2C (Business to Customers). Their major objective is providing best service to the customers through fast delivery, good packing, affordable prices, and quality food as per customised consumer requirement.

Though Rail Restro has vast network of vendors and tie-ups with more than 7000+ premium restaurants within 5km radius of selected stations, the CEO has built a Swiggy-Zomato like model for food delivery for the Indian railway. Time being the prime concern for food delivery, the success of the app is seen through the raising profit and net worth of the organisation.

In 2015 the idea of food app serving the customized food requirements for railway passengers was a unique business idea. The linking of popular food chains and the railway timing was a great initiative, to solve the problem of availability of quality and satisfying food for railway passengers.

It is a B2C business model, with a large network of vendor tie-ups with premium restaurants across India. Passengers travelling in train can order food via rail resto app by entering their PNR details.

Where this was started:

Manish Chandra was travelling with his family to Delhi by a day train, for around 20 hours covering two meals and 2 tea times. He was not satisfied with the quality of the food that was delivered by Indian Railway Catering and Tourism Ltd. Also, he found that there was lack of hygiene and taste. Passengers were left without options.

He saw the problem, with an eye for solution. He got an idea of delivering quality food for passengers in trains. And then Manish Chandra and Suman Priya (his wife) founded Rail Restro with an aim to supply healthy and hygienic food for the passengers, so that they can order and enjoy their favourite food during train journeys and get it deliver to their seats.

The whole idea is about easing the journey of people with replenishments on demand at their disposal. This also made train journeys to transform into experiences and memories.

What problems they Faced while Introducing Rail Restro:

The main problem that they faced was tie-ups with restaurants, it was the major problem, as it was a start-up company and funds were insufficient.

There was lack of awareness about the rail resto service among railway passengers. The public relation and awareness are the base to increase the reach of the service.

They faced rejection of their proposal from many restaurants due to time stipulation issues and pressure of delivery on time at railway stations.

Another problem was about delivering hot food to the customer seats on time, this is because of delay in train arrivals. The food order that reaches on time turn cold over the time, hence it was not possible to deliver hot and fresh food. This had direct affiliation to consumer satisfaction, the ultimatum of the business model.

Building a reliable delivery partners network. Sourcing reliable delivery partners in multiple stations was an added challenge. Every geographical location had different skill requirement of the delivery partner in addition to their traffic knowledge and driving skills.

It was also a challenge to make the restaurants and delivery partners understand the challenge of time involved in the process, as railway had its own challenges in arrival and departures.

Beginning and growth of rail resto operations:

The first project of customized meal delivery on trains was between Patna- New Delhi in 2015. It turned out to be successful and customers liked their service. This encouraged the CEO to expand their business to all major stations in India. He started partnerships with premium restaurants near by the railway stations. Now rail resto service is available in almost 450 railway stations.

Operational Model:

Rail Restro connects passengers to restaurants while travelling by train. It supplies a choice over multiple cuisines during the train journey. Advantageously, rail resto also provides special menu for diabetic patients, senior citizens, and children.

It has a large network of delivery partners, who deliver the food on time. The passenger order should be 45 minutes before the train's arrival at a particular station, the food delivery is processed in a customized way. Digital payment eases the process completely, but an added cash on delivery option is offered to consumers.

As on February 1st, 2022, Rail Restro bookings were tracked close to 4000 meals a day, and the company is planning to receive bookings for 10000 meals a day by the end of the year 2022.

Competitors of Rail Restro:

Travel Khana:

It was founded in 2012 by Pushpinder Singh, it is an online portal that allows travellers on train to order their favourite food in train. It provides food delivery services at all major stations.

Zoop India:

It was founded in 2014 by Punit Jain, with a purpose to connect passengers with restaurants. They assure on-time food delivery as per the customer's choice, just by clicking or through a phone call.

Traveller Food:

Traveller food is a platform that provides quality food while travelling in train. They give choices to the customers for selecting the food at affordable prices.

The Train Vendors:

The local train vendors are the biggest competitors for every railway food vendor, because they sell the food fresh at once to the customers without any delay.

FMGC products:

A lot of packed foods are available, which will show impact on railway food delivery apps in short trips.

SWOT Analysis of Rail Restro:

<p>Strengths:</p> <ul style="list-style-type: none"> Deliver Hygienic food on time. Proper packaging and good service. Large customer Base. Parented by more restaurants. Customer's Food choice and options availability 	<p>Weaknesses:</p> <ul style="list-style-type: none"> Closed restaurants at night Limited staff Delay in trains Less promotional activities Lack of consumer awareness
<p>Opportunities:</p> <ul style="list-style-type: none"> Expand their services throughout India. Can become undisputed leader. Increasing customer base. Accessible 24*7. Advancing Online portals. 	<p>Threats:</p> <ul style="list-style-type: none"> Huge competition Restaurant withdrawals at needy hours Competitor strategies Legal factors

PESTEL Analysis of Rail Restro:**Political Factors:**

The polices and new rules and guidelines set by the central government and state government affects the company directly.

Example: FSSAI (Food Safety and Standards Authority of India) has issued a fresh guideline recently in 2020 December to keep calorific value on menu cards.

Economic Factors:

Between the period 2015-2022, Rail Restro has achieved an overwhelming growth by increasing its services, which helps to generate more employment opportunities, which is good for country's economy. But the competitive human resource concern makes it an expensive idea, due to the increasing fuel prices.

Social Factors:

Mostly youth opt-in for online food services. The age group between 20-45 years are creating a large pool of customers for online delivery services. And customers today have a concern for loyalty, it adds up to the value of rail restro.

Rise in second wave of pandemic resulted in increasing focus on health consciousness and hygienic food. Also, the impact of lock down is indescribable, the slight slow growth of rail restro is an effect from the recent pandemic of 2020.

Technological Factors:

revealed that Indians are in the second place in usage of smart phones for a longer period. This opens a window for businesses to send advertising notifications for the users and gives visibility of the rail restro for inexperienced users through social media platforms.

As a business support, the functionality of GPS in collaboration with the app helps in the time management process at railway, restaurant and client ends.(Whig et al., 2023)

Environmental Factors:

Massive usage of plastic for packaging the food that needs to be delivered to the customer, will cause massive volume of plastic waste. (Jang et al., 2023)This would lead to hazardous waste enormously.

Legal Factors:

As an online food delivery service company, it needs to follow some of the laws that was been setup by FBO (Food Business Operator) and FSSAI (Food Safety and Standards Authority Of India). Prime delay from the railways and cancellation of orders are twinkling threats which needs legal binding ethically

Table No: 1 Revenue of Rail Restro:

year	Revenue
2015	0
2016	764000
2017	2480000
2018	5300000
2019	87074540
2020	46500000
2021	869982410
2022	1358268550

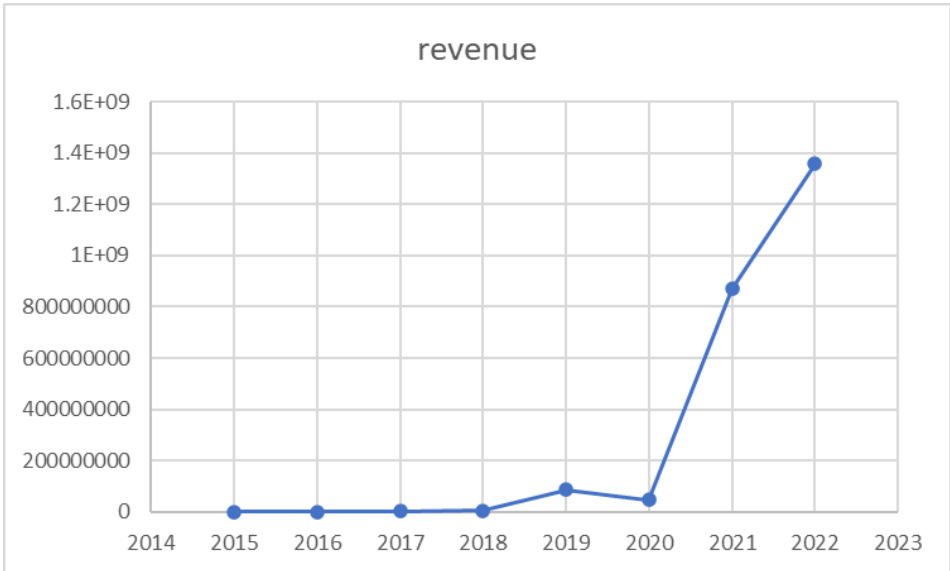
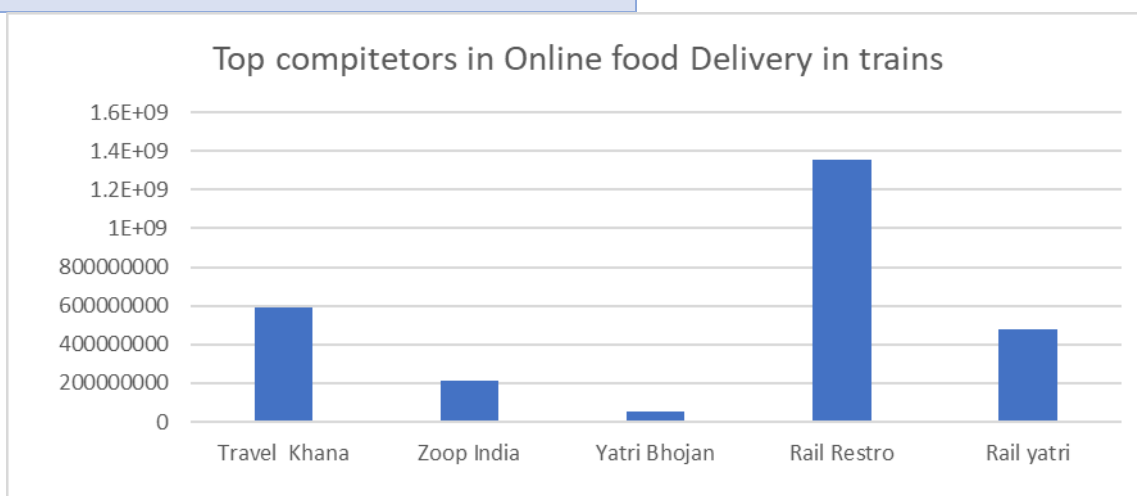


Table no: 2 Total Revenue generated by all Online food delivery in Trains:

Column1	Column2
Company Name	Revenue generated
Travel Khana	591207460
Zoop India	215710830
Yatri Bhojan	50000000
Rail Restro	1358268550
Rail yatri	479324400



Strategic Plan of Rail Restro:

Rail Restro has planned to setup their services almost at every Railway station and improve their food services by supplying more varieties food. The Company must focus on fast delivery of food within 30 minutes. The company wants to deliver almost all food varieties across the domestic railway limits.

Rail Restro plans to invest \$30 million by financial year 2022-2023 to boost logistics infrastructure, which primarily focus on company owned delivery fleet to service all railway stations that it will cover across the nation. The company is presently working on creating a blueprint of food map across all stations parallely they are working on tie-ups with vendors to provide meals throughout the day.

Rail Restro retention and repeat rate was high, but the end audience was tiny, which made it imperative work on consumer acquisition. They partnered with major platforms like Ixigo, Confirm tkt, Rail Mitra, IRCTC to increase their user base. It is targeting over 60 lakh consumers by the end of this year.

Conclusion:

Rail Restro has become one of the successful online food delivery apps in Indian Railways and as the investors are very less for this company the expansion was terribly slow. But Rail Restro helps few cafes to pitch their business underneath their space to expand their everyday business. Furthermore, it is concluded that online food delivery services have assumed to have raised a serious trend and preference among the population of country. But a good brand name is needed when it comes to food industry. Providing Hygienic, tasty, quality food has been successful in creating a brand name that resonates with trust and convenience. There have been many competitors in online food delivery on trains, but they haven't been able to match the brand name, service created by Rail Restro. Rail Restro has emerged as a leading online food delivery service in Indian Railways, offering passengers a reliable and convenient dining option during train travel. By prioritizing hygiene, quality, and customer experience, Rail Restro has established a strong brand presence in the market. The company's continued growth and commitment to innovation indicate a promising future in the online food delivery industry.

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Prediction Of Cardiac Arrest Using Smart Devices With Machine Learning

Algorithm - A Critical Review

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Abstract

Person should wear a accessories which is having a features of detecting human health condition, like smart watches, bands, small devices can be attached your body somehow, which helps us to predict heart disease, or sense of cardiac. Once he detects through that device, that human should be able to find nearby hospital the one which is having heart specialist. Next suppose worst case if that specialist is not available that person should be able to get medicine related to heart disease.

Effective patient treatment plan prediction is a complex task because using body sensor, networks generate a vast amount of data of enormous number of people that need to be stored for data analysis for dynamically predict the treatment plan for individuals. Realistic patient data from various hospitals can be managed and predicted through Machining Learning Algorithm.

Keywords- Embedded control system, ARM, Smart devices like watches wearable's, remote monitoring, cardiac monitoring, artificial intelligence, arrhythmia, heart failure, digital health, mobile health, adding more sensors, like, Galvanic Skin Response (GSR), accelerometer, to the IoT device. etc.

INTRODUCTION

Gadget mastering (ML) is a sub-class of synthetic intelligence that refers to the technique by which computer systems increase sample popularity, or the potential to continuously study from and make predictions based totally on records, then make modifications without being particularly programmed to achieve this.

The term "heart attack" is often mistakenly used to describe cardiac arrest. While a heart attack may cause cardiac arrest, the two aren't the same. Heart attacks are caused by a blockage that stops blood flow to the heart. A heart attack refers to death of heart muscle tissue due to the loss of blood supply. It's a "circulation" problem. A heart attack is quite serious and sometimes fatal. By contrast, cardiac arrest is caused when the heart's electrical system malfunctions. The heart stops beating properly. The heart's pumping function is "arrested," or stopped. In cardiac arrest, death can result quickly if proper steps aren't taken immediately. Cardiac arrest may be reversed if CPR is performed and a defibrillator shocks the heart and restores a normal heart rhythm within a few minutes. Cardiac arrest may be caused by irregular heart rhythms called arrhythmias. A common arrhythmia associated with cardiac arrest is ventricular fibrillation. In ventricular fibrillation, the heart's lower chambers suddenly start



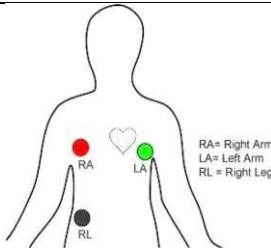
beating chaotically and don't pump blood. The objective of this study is to present a multisensory system using IoT that can collect physical activity heart rates and body temperatures. For this study, we implemented an embedded sensory system with a Low Energy Bluetooth communication module to discreetly collect electrocardiogram and body temperature data using a smart phone in a common environment. This study introduces the use of signal processing and machine learning techniques for sensor data analytics for sudden cardiac arrest and or heart attack prediction.

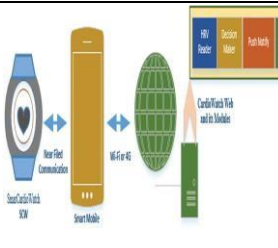
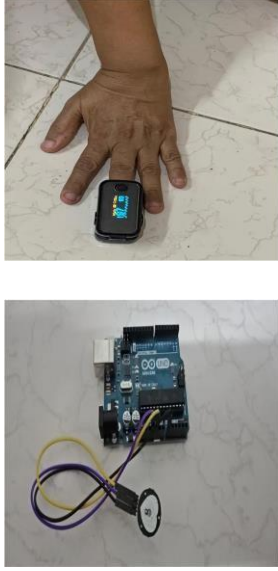
OBJECTIVES

To review and understand the functionality of various smart devices to predict cardiac arrest.

- a. To detect cardiac arrest attack of the person in advance.
- b. To take actions based on the symptoms to reduce the level of risk and the sudden death rate of the people.

A CRITICAL REVIEW

Sl.No	Result	Remarks
1		Wearing smart devices near heart
2		Wearing smart devices on hands
3		Can wear smart devices on any part our body

<p>4.</p>		<p>Smart Cardio Watch System for Patients with Cardiovascular Diseases Who Live Alone</p>
<p>5</p>		<p>Smart Cardiac Framework for an Early Detection of Cardiac Arrest Condition and Risk</p> <p>Apeksha Shah¹, Swati Ahirrao¹, Sharnil Pandya^{1*}, Ketan Kotecha² and Suresh Rathod¹</p> <p>¹ Computer Science Department, Symbiosis Institute of Technology, Symbiosis International (Deemed University), Pune, India, ² Symbiosis Centre for Applied Artificial Intelligence, Symbiosis Institute of Technology, Symbiosis International (Deemed University), Pune, India</p>

The architecture is found to be effective, which is particularly useful for the patients living alone. Given the annual statistics of the mortality for sudden cardiac arrest (SCA) (i.e., 325000 lives), it is integral that timely measures are provided with easy to use services. The use of the proposed system in this study is likely to assist in the heart rate, which helps take timely actions to prevent the occurrence of any adverse event. In this study, the use of different programs and languages concerning the SCW is shown, while also highlighting the way each contributes to the deployment of SCW. This device can enable individuals, particularly the ones living alone to access their health, identify any adverse MI outcome, and attain medical help. It also facilitates the medical care practitioners and communicates the past details of the

patients, which is also easier to maintain. Accordingly, individuals living alone should also indulge in activities that can help subside their detrimental effects, including increased opportunities for social contact, meditation, qigong, tai chi, and yoga. However, accuracy must be ensured when SCW is being used for managing cardiovascular diseases. Previously, only a few studies have focused on the management of cardiovascular diseases. Also, SCWs should be paired with the patient's mobile phones for power supply and network access. Currently, only a few scientific studies have assessed the competencies of various smart watches for measuring the heart rate. However, none of these studies have focused on smart watch accuracy in the context of patients that live alone. Hence, extensive research on the accuracy of smart watches is necessary before they can be used for providing medical assistance.

CONCLUSION

Person will be wearing smart watches through IoT technology can predict person is facing some heart problem, through IoT technology can find near by hospital and doctor availability, If doctor is not available first aid treatment must be known to nurse staying in hospital . The efficacy of the healthcare domain can be revolutionized with precise and timely disease predictions alongside rapid responses and agile decision-making by clinicians, which will improve the overall quality-of-service when fog/edge computing is involved.

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Triangular Cultural Identities in Negotiation to Locate a Paramount Position - Ethnic or National?

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Abstract

The discourse on cultural identities such as language and religion unfailingly occupies paramount importance within the sociopolitical milieu of Tamil Nadu because they contest to take hold of a prominent position. In the course of the contestation, they associate their position with ethnicity and land, which prompts speculation: Is it an ethnic or national identity? Designating a cultural identity as an ethnic or a national is an uphill battle, and the present discussion initiates it by employing Anthony D. Smith's theoretical framework.

Keywords: Ethnic, national, identities, Tamil, Dravidian, Hindu

Introduction

The concept of identity is a highly contentious one in academia. Theorists like Samuel Huntington and Leon Wieseltier have researched the formation of identities in Western countries, and Homi Bhabha and Partha Chatterjee have defined the formation of identities in South Asian countries. According to Huntington, identity is a representation of individuality and self-hood. It shapes people's attitudes; therefore, it is subject to change based on factors like landscape, religion, sex, race, etc (Huntington 2004). The present discussion intends to look at the identities constructed within the sociopolitical milieu of Tamil Nadu and how they shape their paradigm.

The commentary titled "A Crucible of Tamil Nadu's Sociopolitical Ethos 2021 Assembly Elections" (*EPW*, 13 March 2021) has been an influence to initiate the current discussion. It is an attempt to extend the arguments on identities and counter the claim that 'Seeman's discourse ethnicises Tamil identity' (Vijayabaskar and Karthik 2021). The central identities mentioned in the commentary are Tamil, Dravidian-Tamil and Hindu-Tamil. Tamil is a shared identity that interfaces Dravidian-Tamil and Hindu-Tamil, thus forming a triangle. The triangular identities have provided the current interaction with a sense of context. I have framed four fundamental questions to further enhance the understanding of the triangular identities: (i) What is the paradigm of the identity? (ii) How does the identity take its form? (iii) How does the identity function? and (iv) What is the position of the identity?

Tamil

Tamil, according to Robert Caldwell, is the oldest linguistic identity of South India or the Dravidian landscape (1956: 3-4). Vijayabaskar and Karthik have pointed out that Seeman emphasises and prioritises Tamil identity in the present sociopolitical milieu of Tamil Nadu. Predominantly, it is argued as an ethnic identity in the larger context of India, but the Tamil nationalists like Seeman and Maniyarasan have disagreed with this argument and have counter-argued it as a national identity. There are two reasons for the production of the counter-argument. Firstly, they claim that the Tamil landscape

qualifies to be designated as a nation because of its strength and rich tradition. Secondly, they have recognised national identity as more expansive and influential than an ethnic identity.

Although Seeman and Maniyarasan engage with the term 'ethnic,' they do not claim the Tamil community as an ethnic community but rather claim it as national. Their political discourse promotes an ethnic identity into a national identity, which can be substantiated by referring to Anthony D. Smith's three processes of ethnonational transformation. His theoretical framework discloses how an ethnic community is transformed into a nation by disseminating the knowledge of vernacular culture, politicising the ethno-historical tradition and indulging in ethnic purification. The promotion of identity primarily aims at grabbing political power and position. It is obvious that the contestation for political power is the driving force behind elevating the position of Tamil identity within the context of India. In the process, Tamil identity contests with other cultural identities like Hindi and Hindu prevailing in the larger context of India. In addition, the Tamil identity contests the Dravidian identity that appears to be more inclusive and flexible within Tamil Nadu.

Dravidian-Tamil

Vijayabaskar and Karthik have referenced the Dravidian-Tamil identity and have associated it with *Dravida Munnetra Kazhagam* (DMK). I agree with this perception because DMK intensely engages with the Dravidian-Tamil identity. As Subaveerandian has remarked, DMK understands *Dravidam* as the synonym of Tamil (2018). This Dravidian party firmly holds both Dravidian and Tamil identities and works to forge them to form an inclusive identity. Juxtaposing Tamil and Dravidian-Tamil within the context of the Dravidian landscape underpins to argue that the latter is more inclusive than the former. The former is a linguistic identity, and the latter is a blend of land and linguistic identity. According to M. S. S. Pandian, the term *Dravidam* is used to denote the South Indian landscape (2019: 5). The Dravidian ideology holds a similar understanding to delineate the Dravidian-Tamil identity. In addition, it has borrowed Caldwell's understanding of *Dravidam* from his most cited book, *A Comparative Grammar of the Dravidian or South-Indian Family of Languages*. He has engaged with the term *Dravidam*, borrowing from *Manusmriti*, to argue that Dravidians are the people who do not fit into the Aryan caste system (1956). Thus, he has positioned the Dravidian identity as a countering identity to Aryanism.

The argument of Caldwell has thoroughly convinced the Dravidian ideologues; resultantly, they hold the Dravidian identity appreciatively above other identities. They further aspire to exhibit that they are the real opponents of Aryanism, which has resulted in watering conflict between the Tamil nationalists and Dravidian ideologues. The former rejects the Dravidian identity because they firmly believe and vehemently argue that it overshadows the classical linguistic identity, i.e., Tamil. In response, the latter argues that the Dravidian identity functions as an armour to safeguard the Tamil land from Aryanism. It is arguable that, like the Tamil identity, the Dravidian-Tamil identity is contesting to grab political power, thereby establishing its position within the sociopolitical milieu of Tamil Nadu. It does so to further consolidate the political power in Tamil Nadu and the larger context of India by growing more receptive. Thus, it is vivid that, on the one hand, the Dravidian-Tamil identity grows more inclusive to earn political acceptance. On the other hand, Tamil identity positions its roots within a confined boundary by growing more exclusive in consolidating political power.

Hindu-Tamil

It is an emerging identity in Tamil Nadu – Maniyarasan and Arjun Sampath engage with this identity in their political actions. It is a forging identity which comprises religious and linguistic identities. Vijayabaskar and Karthik have referred to Hindu-Tamil identity as an exclusionary paradigm (2021). I concur with their engagement because the Hindu-Tamil identity excludes religious identities such as

Muslims and Christians of Tamil ethnicity. They have associated Hindu-Tamil identity with the Bharatiya Janata Party (BJP) and have argued that BJP attempts to enter into Tamil Nadu through Hindu-Tamil identity (Vijayabaskar and Karthik 2021). I intend to refashion this association; however, unquestionably, I agree with the latter part of the argument. Associating Hindu-Tamil identity with BJP can be partially concurred because Maniyarasan, who constantly poses to counter the right-wing ideology and propagates Tamil nationalism, also engages with the Hindu-Tamil identity like the right-wing ideologues. Therefore, it would be inappropriate to associate the Hindu-Tamil identity exclusively with BJP.

The Dravidian-Tamil identity contends with the Hindu-Tamil identity because of its exclusionary characteristic. As a result, both identities wrestle in the sociopolitical terrain of Tamil Nadu, and the Dravidian-Tamil identity proves to be stronger. I perceive the wrestle as an attempt to seize political power, and consider the contestation among Tamil, Dravidian-Tamil and Hindu-Tamil as an attempt to gain political power and locate a dominating position within the sociopolitical milieu of Tamil Nadu and in the larger context of India. These identities take different positions according to the landscape that they are situated in. When Tamil identity is positioned within the larger context of India, it is argued as an ethnic identity. Similarly, when Hindu identity is perceived within the larger context, it is argued as a national identity. However, examining these identities within the theoretical framework of Anthony D. Smith will inform us of their exact paradigm.

Ethnic or National?

Smith, in one of the ways, associates the term ethnic with a community that is a named human population, has the belief of common ancestry, has the importance of historical memories, has a shared culture that is more variable, is attached to a specific territory and has the element of solidarity (1993: 51). He delineates solidarity as the sense of belonging to a community. I use Smith's framework to examine the identities analytically to determine the paradigm of the triangular identities.

S. No.	Qualifying Attributes	Tamil	Dravidian-Tamil	Hindu-Tamil
1	Requires named human population	✓	✓	✓
2	Shows belief in common ancestry	✓	x	x
3	Existence of historical memories	✓	x	x
4	Existence of shared culture	✓	x	✓
5	Attachment to a specific territory	✓	x	x
6	Requires the element of solidarity	✓	✓	✓

Table. 1 Examining Triangular Identities within Ethnic Attributes

The aforementioned table unambiguously demonstrates that Tamil identity qualifies to be called an ethnic as it forms a community based on the six attributes. The other two identities do not qualify to be called ethnic because they could not form a community based on a named human population. Though they have a named human population, they could not form a community as they do not have the myth of common ancestry, historical memories and attachment to a specific territory. Dravidian-Tamil and Hindu-Tamil exist in Tamil Nadu, but neither possesses any specific territory as their landscape. However, they differ in the matter of reflecting a shared culture. The Hindu-Tamil identity has

fashioned a hybridised culture, borrowing from Tamil ethnicity and the Hindu religion, whereas the Dravidian-Tamil identity does not possess any particular culture. However, it borrows the cultural practices of Tamil ethnicity and other Dravidian ethnicities. Thus, it is apparent that the Dravidian-Tamil identity, like the Hindu-Tamil identity, practises a hybridised culture. Now, examining these identities within the context of national identity is necessary.

According to Smith, there are five attributes to qualify an identity as national, and they are possessing a historical territory, historical memories, common culture, common legal rights and duties, and common economy with territorial mobility (1991: 14). Territorial mobility is the change in the locality that occurs when a person shifts from one place to another. The following tabulation examines Tamil, Dravidian-Tamil and Hindu-Tamil identities in the light of these five qualifying attributes of national identity.

S. No.	Qualifying Attributes	Tamil	Dravidian-Tamil	Hindu-Tamil
1	Possesses a historical territory	✓	x	x
2	Possesses historical memories	✓	x	x
3	Possesses a common culture	✓	x	✓
4	Possesses common legal rights and duties	✓	x	x
5	Possesses a common economy with territorial mobility	✓	x	x

Table. 2 Examining Triangular Identities within National Attributes

The tabulation illustrates that Tamil identity makes it through the analysis and qualifies to be referred to as a national identity. It reflects that the Tamil identity possesses all five attributes of national identity: a historical territory, historical memories, common culture, common legal rights and duties, and a common economy with territorial mobility. The Dravidian-Tamil identity does not possess any of these factors, whereas the Hindu-Tamil identity merely possesses a common culture. As mentioned earlier, Hindu-Tamil identity has designed its hybridised culture to reinforce its roots in Tamil Nadu. Thus, the analysis has sharply-etched that Dravidian-Tamil and Hindu-Tamil identities could not go through the examination in view of the fact that they lack the attributes of national identity.

Conclusion

The current discussion arrives at the conclusion that among the triangular cultural identities, Tamil identity undergoes the evaluative framework of Smith to position itself both as an ethnic and national identity. Thus, the analysis validates the claim of Seeman: “Tamil is a national identity” (Aruliniyan, 2019). Though a bare claim is made that the Dravidian-Tamil and Hindu-Tamil identities are ethnic/national, I have interacted with this perception because these identities often contest with Tamil identity to occupy a predominant position. The contestation has created a necessity to examine the paradigm of triangular identities. Furthermore, the claim of Vijayabaskar and Karthik that Seeman’s discourse “invokes an ethnicised Tamil identity” and constructs “an ethnicised Tamil identity” (2021: 14, 16) has driven us to make this attempt. I disagree with the claim of Vijayabaskar and Karthik because Seeman’s discourse negotiates to position Tamil as a national identity though it has the characteristics of an ethnic identity. In the light of Smith’s framework, the current discussion concludes

that Tamil identity qualifies to function as a national identity; therefore, the claim: ‘Seeman’s discourse is striving to ethnicise Tamil identity’ can be negated.

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A Study on India's Balance of Payment and its Determinants

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ABSTRACT

The significance of comprehending the complex relationship between India's capital account in the balance of payments and foreign direct investment (FDI) is emphasized in this article. Its goal is to enlighten investors, decision-makers, and other interested parties on India's economic prospects. The effectiveness of laws and regulations affecting FDI in India in achieving economic objectives and guaranteeing sustainable growth is also evaluated in this study. The study also offers recommendations for managing India's balance of payments problems about FDI, imports, and exports. The importance of foreign direct investment (FDI) in India's economy is brought up in the conclusion, along with the necessity of strategic strategies to control its effects on the balance of payments.

Keywords: FDI, sustainable growth, imports, exports, capital account.

INTRODUCTION

One important economic statistic that shows how a country interacts financially with the rest of the globe is its balance of payments (BoP). The capital account and the current account make up its two primary parts. Whereas the latter include cross-border investments, the former monitors the flow of commodities and services. Foreign Direct Investments (FDI) have a major impact on the capital account of India, a fast-developing economic powerhouse. In-depth analysis of the complex relationship between foreign direct investment (FDI) and India's capital account in the balance of payments is provided in this paper, along with insights into the effects of FDI on the nation's economic stability, growth potential, and reputation abroad.

India has become a popular location for foreign investors due to its large and diverse market, growing middle class, and government that actively supports economic changes. As a result, foreign direct investment (FDI) has been flooding the nation in a number of industries,

including manufacturing, services, and technology. India has benefited from FDI inflows in terms of economic growth, but there are concerns about how these inflows would affect the country's capital account.

The capital account of the balance of payments, which is made up of foreign direct investment (FDI), foreign portfolio investments, and other capital flows, is essential to preserving external financial stability. Not only is it crucial for policymakers to comprehend the dynamics of foreign direct investment (FDI) in India's capital account, but also for businesses and investors. It is critical to look into the effects of FDI on India's economy because it can affect exchange rates, the balance of payments as a whole, and ultimately the nation's economic performance.

The objective of this study is to present a thorough examination of the impact of FDI inflows on India's capital account in the balance of payments. This study aims to provide insight on the complex web of relationships that tie foreign direct investments, India's capital account, and its larger economic backdrop by analyzing the patterns, drivers, and effects of FDI. Furthermore, the efficacy of the policies and rules that influence foreign direct investment (FDI) in India in accomplishing economic goals and guaranteeing sustainable growth will be assessed in this research.

In summary, the relationship between foreign direct investment and India's capital account in the balance of payments is an essential topic. The purpose of this research is to improve our comprehension of this intricate relationship and offer insightful information to investors, policymakers, and other stakeholders who are concerned about the economic future of India.

OBJECTIVES:

1. Identify the key factors influencing the balance of payments of India.
2. Identify the impact of FDI on the balance of payments of India.
3. Analyze the relationship between trade balance and balance of payments.
4. Identify policy ramifications and suggestions for controlling India's balance of payments issues in relation to FDI, imports and exports.

REVIEW OF LITERATURE

(George, 2022) Changes in policy throughout the liberalization era have resulted in a shift in the financing of Bangladesh's balance of payments towards non-debt flows. Because of this change, financing has become less expensive in the post-liberalization age. Foreign Portfolio Investment (FPI) has been a major contributor to the rise in foreign investment. To assess the

direct and indirect effects of FDI firms on the manufacturing sector as well as the impact of FDI on the BOP's Current Account by country, a thorough empirical investigation is necessary.

(Sultani & Faisal, 2022) The literature on managing the balance of payments (BOP) in developing and least developed countries (LDCs) is reviewed in this paper. It creates a thorough index of the primary BOP determinants, lists the dimensions of BOP issues, presents a fresh typology, and contrasts the effects of the determinants that have been found. Results indicate that BOPs are impacted by terms of trade, FDI, currency rates, structural changes, exports, imports, fiscal policy, money supply, inflation rate, loss of confidence, and infrastructure quality.

(Balkanli, 2019) The idea of foreign direct investment is examined in this study along with how it affects employment, economic growth, and the balance of payments in host nations. Because direct foreign capital investments have the potential to influence macroeconomic consequences, they are focused on production and require extra prudence when it comes to economics. The results imply that these investments have an impact on the circumstances surrounding employment, economic growth, and the host country's balance of payments.

(Rahman, 2016) For developing nations, capital transfer—in particular, inflows of foreign direct investment, or FDI—is essential. Investing capital into the host or home economy to establish new equity bases is known as foreign direct investment (FDI). The Balance of Payments (BOP) of a nation, which documents all financial exchanges between its citizens and foreign nations, serves as an indicator of this macroeconomic variable. The purpose of this study is to figure out how much FDI inflows affected India's BOP between 1991–1992 and 2014–2015.

Nguku, E. K. (2013) (Relationship Between Foreign Direct Investment and Balance of Payments in By Eric K . Nguku a Research Project Submitted in Partial Fulfilment of the Requirement for the Award of the Degree of Master of Business Administration School of Business, 2013). Developing nations are becoming more and more interested in foreign direct investment (FDI) as a result of decreased local investment and rising foreign borrowing costs. A study that looked at the connection between foreign direct investment (FDI) and Kenya's balance of payments discovered that while FDI and lagged FDI had no effect on imports, the relative prices of imports and GDP did. The study also discovered that exports were positively impacted by the GDP in relation to export prices. FDI, however, had no appreciable effect on imports, exports, or CABECT. Since the current inflows have not been substantial enough to

affect the balance of payments, the report advises Kenya to put policies in place to draw in more FDI inflows and take advantage of their benefits.

(Chandrachud & Gajakshmi, 2013) A new age of foreign direct investment (FDI) to supplement domestic resources has been ushered in by India's 1991 introduction of the New Economic Policy and following liberalization initiatives. The nation's economic reforms have drawn criticism, meanwhile, for producing steady development that, after liberalization, led to "jobless growth." Despite this, foreign direct investment (FDI) has had a favorable effect on China's retail industry, helping the country's economy through the growth of companies like Carrefour, Tesco, Metro, and Wal-Mart.

(Srikanth & Kishore, 2012) Using monthly data from April 2005 to March 2011, both before and after the Global Financial Crisis, the paper investigates the effects of Foreign Direct Investment (FDI) equities inflows on the Indian economy. The relationships between FDI equity inflows and macroeconomic factors like inflation, the Index of Industrial Production (IIP), interest rates, currency rates, and foreign exchange reserves are established by the Granger Causality Test. The findings demonstrate a unidirectional causal relationship, indicating that in order to boost industrial production, control inflation, and improve India's credibility abroad, policymakers should seek to draw in more foreign direct investment.

METHODOLOGY:

This study aims to identify the determinants of balance of payments, identify the impact of FDIs, imports and exports on the balance of payments. To analyze the data multiple regression has been considered.

Model specification:

The dependent variable is capital account balance with independent variables of foreign direct investments, loans, banking, rupee debt services, other capital, errors and omissions to find out the relation between the FDIs and capital account balance.

The dependent variable is current account balance with independent variables of trade balance and net invisibles to find out the relation between trade balance and current account balance.

To find out the determinants of balance of payments we used Bop of India as dependent variable and current account and capital account balances as independent variables.

To identify how imports and exports affect the trade balance, we used imports and exports as independent variables and trade balance as dependent variable.

Data and description:

The data for this study is taken from the official website of reserve bank of India (<https://dpiit.gov.in/>), department for promotion of industry and internal trade (<https://rbi.org.in/>)

Model evaluation:

The overall goodness of fit for the model was evaluated using the R squared value which is 0.99 representing 99% of the variability in the dependent variables can be explained by the independent variables. The number of variables in the model was taken into consideration by the adjusted R-squared, which came out at 0.99. It was determined that all the independent variables had statistically significant coefficients ($p < 0.05$), indicating a noteworthy influence on the balance of payments.

Limitation:

1. The economic fluctuations due to covid 19, Ukraine-Russia war may impact the accuracy of the study.
2. The study may not capture all the potential factors which influence the balance of payments.
3. The study didn't take into account the intangible factors which affect the balance of payments.

Scope for future research:

The future research could address these limitations, specify the objective measures of the balance of payments, or to determine the what industries have seen the most FDI in India.

DATA ANALYSIS AND INTERPRETATION:

Year	Capital account balance	Foreign investments	Loans	Banking	Rupee debt services	Other capital	Errors and omissions
2012	65324	39231	19307	16226	-79	-6929	-2432
2013	91989	46711	31124	16570	-58	-5047	2689

2014	47804	26386	7765	25449	-52	-10761	-983
2015	88265	73456	3184	11618	-81	1109	-1021
2016	40055	31891	-4634	10630	-73	3315	-1073
2017	35967	43224	2379	-16616	-99	7559	-480
2018	92292	52401	16660	16190	-75	6213	902
2019	53917	30094	15850	7433	-31	1057	-486
2020	84154	44417	25686	-5315	-69	18462	974
2021	63374	80092	6903	-21067	-64	-2143	-347
2022	86266	21809	33605	6669	-71	23794	459

SUMMARY OUTPUT

Regression Statistics

Multiple R	1
R Square	0.999999999
Adjusted R Square	0.999999998
Standard Error	0.887524989

Observations 11ANOVA

	df	SS	MS	F	Significance F
Regression	6	4.612E+09	7.69E+08	9.76E+08	2.8E-18
Residual	4	3.1508024	0.787701		
Total	10	4.612E+09			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-1.0753689	1.596419	-0.67361	0.53747	-5.50774	3.35700	-5.5077	3.357
Foreign investments	1.000007412	2.039E-05	49044.44	1.04E-18	0.999951	1.000064	0.99995	1.00006
Loans	1.000022287	3.26E-05	30680.1	6.77E-18	0.999932	1.000113	0.99993	1.00011
Banking	1.000012075	2.62E-05	38174.57	2.83E-18	0.999939	1.000085	0.99994	1.00008
Rupee debt services	0.995280108	0.0193696	51.38362	8.59E-07	0.941501	1.049059	0.9415	1.04906
Other capital	1.000006259	3.998E-05	25009.87	1.53E-17	0.999895	1.000117	0.9999	1.00012
Errors and omissions	0.999953049	0.0002773	3605.934	3.55E-14	0.999183	1.000723	0.99918	1.00072

INTERPRETATION: From the above analysis, it is made clear that foreign investments, loans, banking, rupee debt services, other capital, errors and omissions directly affect the capital account balance of India. A change in any of these factors would alter the capital account balance. There is a direct relationship between these factors and the capital account. P value is greater than 0.05 in all cases which suggests that all these independent variables have a significant impact on the capital account balance. Hence the capital account balance is dependent on the foreign investments, loans, banking, rupee debt services, other capital, errors and omissions. These factors are directly proportional to the capital account balance.

Year	Trade balance	Net invisibles	Current account balance
2012	-189759	111604	-78155
2013	-195656	107493	-88163
2014	-147609	115313	-32296
2015	-144940	118081	-26859
2016	-130079	107928	-22151
2017	-112442	98026	-14417
2018	-160036	111319	-48717
2019	-180283	123026	-57256
2020	-157506	132850	-24656
2021	-102152	126065	23912
2022	-189459	150694	-38766

SUMMARY OUTPUT

Regression Statistics	
Multiple R	1
R Square	1
Adjusted R Square	1
Standard Error	0.56201
Observations	11

ANOVA					
	df	SS	MS	F	Significance F

Regression	2	9.58E+09	4.79E+09	1.52E+10	4.84E-39
Residual	8	2.526835	0.315854		
Total	10	9.58E+09			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-0.1777	1.543349	-0.11515	0.911162	-3.73669	3.381248	-3.73669	3.38125
Trade balance	0.99999	5.83E-06	171467.8	1.5E-39	0.999976	1.000003	0.999976	1
Net invisibles	0.99999	1.28E-05	77848.82	8.3E-37	0.999957	1.000016	0.999957	1.00002

INTERPRETATION:

According to the analysis, Trade balance and net invisibles of a country deeply affects the current account balance of a country. P value is greater than 0.05 in all cases which suggests that all these independent variables have a significant impact on the current account balance. Here, the trade balance of India highly impacts the net current account balance which is 100% sure with the help of statistical analysis. The Net invisibles and trade balance are directly proportional to the current account balance of a country. The changes in these factors will highly impact the current account balance.

Year	Imports	Exports	Trade Balance
2012	499533	309774	-189759
2013	502237	306581	-195656
2014	466216	318607	-147609
2015	461484	316545	-144940
2016	396444	266365	-130079
2017	392580	280138	-112442
2018	469006	308970	-160036
2019	517519	337237	-180283
2020	477937	320431	-157506
2021	398452	296300	-102152
2022	618623	429164	-189459

SUMMARY OUTPUT

Regression Statistics	
Multiple R	1
R Square	1
Adjusted R Square	1
Standard Error	0.4486122
Observations	11

ANOVA

	df	SS	MS	F	Significance F
Regression	2	1.01E+10	5.049E+09	2.51E+10	6.462E-40
Residual	8	1.6100232	0.2012529		
Total	10	1.01E+10			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.181379	1.0866636	0.1669136	0.87158	-2.324472	2.68723	-2.324472	2.68723
Imports	-1.00001	5.43E-06	184150.65	8.47E-40	-1.000013	0.999988	-1.000013	0.99999
Exports	1.000002	8.478E-6	117953.12	2.99E-38	0.9999806	1.00002	0.9999806	1.00002

INTERPRETATION:

Based on the analysis, imports of a country are inversely proportional to the trade balance of that country. P value is greater than 0.05 in all cases which suggests that all these independent variables have a significant impact on the trade balance. With an increase in the imports, there will be a reduction in trade balance and vice versa. The exports of a country are directly proportional to the trade balance. An increase in the exports will lead to an increase in trade balance and vice versa. Hence the imports and exports will indirectly affect the current account balance of a country and thereby affecting the balance of payments.

Year	Balance of payments	Capital account balance	Current account balance
2012	-12831	65324	-78155
2013	3826	91989	-88163
2014	15508	47804	-32296
2015	61406	88265	-26859
2016	17905	40055	-22151
2017	21550	35967	-14417
2018	43574	92292	-48717
2019	-3339	53917	-57256
2020	59498	84154	-24656
2021	87286	63374	23912
2022	47501	86266	-38766

SUMMARY OUTPUT

Regression Statistics	
Multiple R	1

R Square	1
Adjusted R Square	1
Standard Error	0.575453
Observations	<u>11</u>

ANOVA

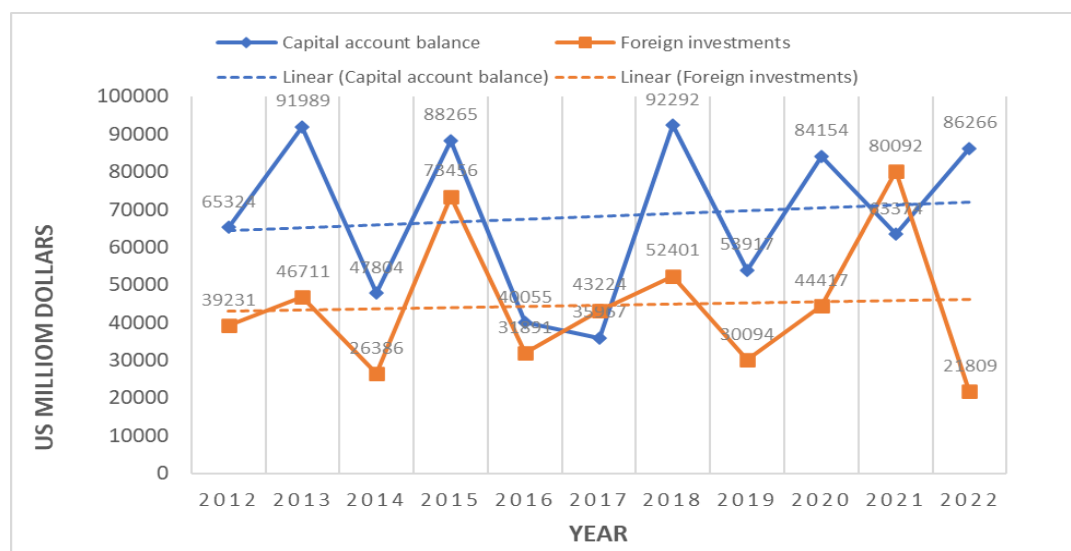
	df	SS	MS	F	Significance F
Regression	2	9.67E+09	4.8E+09	1.5E+10	5.6E-39
Residual	8	2.649172	0.33115		
Total	10	9.67E+09			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.598102	0.603207	0.99154	0.35046	-0.79289	1.9891	-0.7929	1.9891
Capital account balance	0.999993	9.01E-06	110996	4.9E-38	0.99997	1.00001	0.99997	1.00001
Current account balance	1.000001	6.25E-06	159967	2.6E-39	0.99999	1.00002	0.99999	1.00002

INTERPRETATION:

According to the above analysis, the capital account and current account of India are the biggest contributors to the balance of payments of India. P value is greater than 0.05 in all cases which suggests that all these independent variables have a significant impact on the balance of payments. A change in any of which will lead to a change in the balance of payments of India. This could be a reason that the balance of payments of India keep fluctuating with a change in either of its factors i.e., current account and capital account.

RELATIONSHIP BETWEEN CAPITAL ACCOUNT AND FDI's



The foreign direct investments (FDI's) are directly proportional to the capital account of a country. Here we can see the trend line of FDI's of India from various countries. A change in FDI will inevitably alter the balance of the capital account which will in turn changes the balance of payments. The above graph depicts the changes in FDI and how it affects the capital account of India overtime (for a period of 11 years).

CONCLUSION:

This study focuses on determining the factors which influence the balance of payments of India. From all the above research, it is concluded that the balance of payments of India is affected by its current account and capital account balances while the trade balance and FDIs play a key role in the balance of payments. The change in the FDIs will lead to the change in the balance of payments. A change in the imports will alter the trade balance which will then lead to the change in the balance of payments. The study has taken into account the latest measures taken by government of India in order to stabilize the balance of payments to recommend necessary measures (such as promoting exports of the country, limiting the imports to the country, management of foreign exchange reserves, technology and innovation etc.) needed to reduce the current account deficit and to improve the balance of payments.

MEASURES TAKEN BY INDIAN GOVERNMENT TO IMPROVE THE BALANCE OF PAYMENTS:

1. Current Account:

Boosting the "Make in India" strategy to increase domestic production and lessen dependency on imports will help reduce the trade imbalance. Expanding the export basket's diversity beyond conventional goods like jewelry and textiles. Free trade agreements (FTAs) with particular nations to increase competitiveness and market access.

Increasing exports of services: Extending IT and IT-enabled services (ITES) to take advantage of current advantages and make foreign exchange profits. Promoting the tourism industry through programs including the creation of infrastructure and e-tourist visas.

2. Capital Account:

Liberalizing foreign direct investment (FDI) policies in important industries including retail, defense, and civil aviation will draw in foreign investment. Enhancing the regulatory climate

and the ease of doing business. Foreign exchange reserves can be diversified by issuing sovereign bonds in foreign currencies.

Handling foreign investments in portfolios (FPIs): Putting in place calibrated controls to stop abrupt outflows and regulate FPI flows. Bolstering the legal framework to guarantee moral and sustainable business activities.

3. Additional Actions:

Gold monetization plan: lowering imports of gold, creating liquidity, and incentivizing individuals and organizations to put gold in banks.

Emphasize domestic demand: To lessen dependency on imports, increase domestic consumption through programs like affordable housing and rural development plans.

Exchange rate management is the process of controlling current account imbalances and preserving external competitiveness by making use of the exchange rate's flexibility.

LATEST FINDINGS:

In recent years, these metrics have shown some encouraging results:

1. Between FY 2018–19 and FY 2022–2023: the Current Account Deficit (CAD) decreased from 4.6% of GDP to 3.3% of GDP.
2. Foreign exchange reserves: As of December 26, 2023, India's reserves of foreign exchange had risen to an all-time high of more than \$640 billion.
3. FDI inflows: Despite global challenges, FDI inflows have remained strong, amounting to \$57.04 billion in FY 2022–2023.

OBSTACLES REMAIN:

1. Geopolitical concerns and rising global commodity prices present new difficulties in controlling the current account deficit.
2. It will take ongoing work to remove infrastructural bottlenecks and enhance the business climate in order to draw in sustained foreign investment.

SUGGESTIONS & RECOMMENDATIONS:

1. Trade Promotion: To make domestic products more competitive in global markets, support trade shows, export promotion programs, and other events.

2. **Export Product and Market Diversification:** Encourage the expansion of export offerings and marketplaces to lessen reliance on certain commodities or trade partners. Find places where local production can take the place of imports without sacrificing effectiveness or quality. In order to meet local demand, promote the growth of domestic industries.
3. **Controlled Import Policies:** Put in place specific procedures to restrict the import of luxury goods and non-essential commodities that make up a large portion of the trade deficit.
4. **Management of Foreign Exchange Reserves:** To strengthen the currency and guarantee the ability to comply with international payment obligations, maintain a sufficient level of foreign exchange reserves.
5. **Structural Reforms:** To improve the economy's overall competitiveness, implement structural reforms. This could entail lowering bureaucratic barriers and enhancing logistics and infrastructure.
6. **Encourage research and development expenditures** in order to promote creativity and the creation of high-value goods and services that can be exported.
7. **Energy Security:** Create plans to improve energy security, such as lowering reliance on oil imports, increasing energy efficiency, and making investments in renewable energy sources.
8. **Enhancing the Business Environment:** To draw in foreign direct investment (FDI) and spur economic growth, simplify regulatory procedures, cut bureaucracy, and establish a business-friendly atmosphere.
9. **Education and Skill Development:** To guarantee a skilled labor force able to participate in high-tech businesses and services, invest in education and skill development initiatives.
10. **Financial Sector Reforms:** Boost the financial sector to draw in foreign money and make sure that funds are allocated effectively to the economy's more productive sectors.
11. **Adopt exchange rate strategies** that will increase your country's export competitiveness. Nonetheless, cautious management of these measures is necessary to prevent negative impacts on inflation and overall economic stability.
12. **Fiscal Policies:** To ensure that government finances do not contribute to macroeconomic imbalances, sound fiscal policies should be implemented in order to maintain fiscal discipline.

13. Trade Agreements and Partnerships: To increase market access for exports and diversify trading partners, actively engage in regional and international trade agreements.
14. Monitoring and Modification: Keep a close eye on economic indicators and make necessary policy adjustments to adapt to shifting market conditions.
15. Liberalize FDI (foreign direct investment) policies: Maintain the liberalization of FDI policies in several areas to increase international involvement. To encourage investment in developing industries, examine and update these policies regularly.
16. Efficient Approval Procedures: To cut down on bureaucratic roadblocks and promote investment, streamline and accelerate the approval procedure for foreign direct investment projects.
17. Debt Instruments and Infrastructure Bonds: Infrastructure Financing: To raise long-term capital for the financing of significant infrastructure projects, issue debt instruments including infrastructure bonds. To encourage such investments, offer tax breaks.
18. PPPs, or public-private partnerships: Encourage PPPs: Through PPPs, the private sector can be encouraged to participate in the construction of infrastructure. This has the potential to draw in both foreign and domestic investment.
19. International Partnerships and Agreements: Strengthening bilateral and multilateral agreements will promote cross-border investment. Work together with other nations to make the transfer of capital easier.
20. Investor Education and Promotion: Investor Outreach Programs: To highlight investment prospects in India, run marketing campaigns and investor education programs. Promote the nation as a desirable location for investments.
21. Politics and Regulatory Stability: Risk Mitigation Maintain political and regulatory stability to help investors feel less risky. An environment that is conducive to investment is enhanced by clear and consistent policies.
22. Technology and Innovation: Technology Parks and Innovation Hubs: Create technology parks and innovation hubs to draw capital to high-tech sectors. Encourage an atmosphere that is innovative.
23. ESG factors to consider when making sustainable investments to draw in investments from organizations that prioritize sustainability, policymakers should take environmental, social, and governance (ESG) considerations into account.

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Cultivating Connections: Strategies for Successful Cross-Cultural Communication in College

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ABSTRACT

In today's diverse and interconnected educational landscape, fostering effective cross-cultural communication among college students has become increasingly essential. This abstract delves into the significance of cultivating successful strategies for cross-cultural communication within the college environment. The study aims to explore various approaches, tools, and initiatives that institutions can employ to enhance intercultural understanding and communication among their student body.

The abstract discusses the challenges faced in an increasingly multicultural campus setting, emphasizing the critical need for promoting cultural sensitivity, understanding, and open dialogue. It examines the benefits of fostering cross-cultural communication skills, such as improved collaboration, enhanced global perspectives, and a richer learning environment.

Moreover, the abstract presents several strategies and frameworks designed to facilitate successful cross-cultural communication among college students. These strategies encompass both formal and informal approaches, including intercultural workshops, diversity training, peer-led initiatives, multicultural events, and intergroup dialogues. The study highlights the importance of embedding these strategies into the college curriculum and extracurricular activities to create an inclusive and culturally responsive campus community.

Additionally, the abstract emphasizes the role of technology and digital platforms in bridging cultural gaps, enabling virtual cultural exchanges, and providing opportunities for students to engage with diverse perspectives beyond geographical boundaries.

In conclusion, the abstract underscores the significance of implementing comprehensive and sustainable strategies for successful cross-cultural communication in higher education settings. It advocates for proactive measures that not only promote cultural awareness but also foster a sense of belonging, mutual respect, and appreciation for diverse backgrounds among college students.

This abstract offers a concise overview of the importance, challenges, strategies, and benefits associated with fostering successful cross-cultural communication among college students.

Key Words: Cross-cultural communication, College environment, Intercultural understanding, Cultural sensitivity, Global perspectives, Strategies, Diversity training, Multicultural events, Inclusive community, Technology.

Definition and importance of cross-cultural communication in the college environment

Cross-cultural communication in the college environment refers to the exchange of information, ideas, and values among individuals from diverse cultural backgrounds within an educational setting. It involves the interaction between students, faculty, staff, and other stakeholders who bring varying cultural perspectives, beliefs, customs, languages, and experiences to the campus community.

This form of communication aims to foster understanding, respect, and effective interaction among individuals from different cultural backgrounds. It involves navigating cultural differences, acknowledging diverse viewpoints, and developing strategies to bridge communication gaps within the educational context.

Importance of Cross-Cultural Communication in Colleges:

Promoting Diversity and Inclusivity: Cross-cultural communication in colleges fosters an inclusive environment where students from different cultures feel valued and respected. It encourages appreciation for diversity and helps create a welcoming space for individuals irrespective of their cultural backgrounds.

Enhanced Learning Experiences: Exposure to diverse perspectives enriches the learning experiences of students. Interacting with peers from different cultures broadens their worldview, encourages critical thinking, and promotes a deeper understanding of global issues.

Preparation for Global Citizenship: In an increasingly interconnected world, cross-cultural communication equips students with essential skills for global citizenship. It enables them to navigate multicultural environments, work effectively in diverse teams, and become culturally competent individuals.

Effective Collaboration and Communication: Understanding cultural nuances and communication styles is crucial for effective teamwork and collaboration. Students who possess cross-cultural communication skills can bridge communication gaps, mitigate misunderstandings, and work harmoniously in diverse academic or professional settings.

Conflict Resolution and Building Relationships: Cross-cultural communication equips individuals with the ability to navigate conflicts arising from cultural differences. It facilitates building meaningful relationships based on mutual respect, understanding, and tolerance.

Preparation for a Diverse Workforce: Colleges play a pivotal role in preparing students for future careers. Cross-cultural communication skills acquired during college education are highly valued in the global job market, making graduates more competitive and adaptable in diverse workplace environments.

Cross-cultural communication in the college environment is crucial for creating inclusive, supportive, and culturally diverse learning environments. It prepares students to thrive in an increasingly globalized society, fostering respect, understanding, and effective communication across cultural boundaries.

Strategies for effective cross-cultural communication

In today's interconnected world, fostering successful strategies for effective cross-cultural communication holds immense significance in various spheres, especially in educational, professional, and social

environments. The ability to communicate and interact respectfully and effectively across diverse cultural boundaries is essential for fostering understanding, collaboration, and harmony. Several key reasons underscore the significance of developing and implementing such strategies:

Globalization and Diversity:

With the global interconnectedness of societies, workplaces, and educational institutions, the need for successful cross-cultural communication strategies has become indispensable. Cultivating an environment that embraces diversity and values cultural differences contributes to a richer and more inclusive social fabric.

Enhancing Understanding and Respect:

Successful cross-cultural communication strategies foster a climate of understanding and respect among individuals from different cultural backgrounds. They encourage individuals to appreciate diverse perspectives, customs, traditions, and values, thereby reducing misunderstandings and promoting empathy.

Strengthening Relationships:

These strategies play a pivotal role in strengthening interpersonal relationships. They enable individuals to navigate through cultural differences, build trust, and form meaningful connections based on mutual respect and understanding. In academic settings, this fosters a positive learning environment and encourages collaboration.

Facilitating Effective Communication:

Effective cross-cultural communication strategies equip individuals with the skills to communicate clearly and sensitively across cultural divides. This includes understanding non-verbal cues, adapting communication styles, and being aware of cultural norms and taboos, ensuring messages are accurately conveyed and received.

Leveraging Diverse Perspectives:

Cultivating successful strategies for cross-cultural communication harnesses the power of diverse perspectives. It encourages creativity, innovation, and critical thinking by bringing together a variety of ideas, viewpoints, and approaches to problem-solving, enriching the learning and decision-making processes.

Promoting Inclusivity and Equity:

These strategies contribute significantly to creating inclusive and equitable environments. By acknowledging and embracing diversity, they ensure that all individuals, regardless of their cultural background, feel valued, respected, and included, fostering a sense of belonging.

The significance of fostering successful strategies for effective cross-cultural communication cannot be overstated. These strategies not only enhance relationships and communication but also facilitate collaboration, understanding, and inclusivity in diverse environments. By promoting cultural awareness, empathy, and adaptability, they play a pivotal role in navigating the complexities of our increasingly diverse world.

Challenges in Cross-Cultural Communication on College Campuses

The student population within educational institutions worldwide has become increasingly diverse, encompassing individuals from various cultural, ethnic, socioeconomic, and geographical backgrounds. This diversity brings a multitude of perspectives, experiences, and insights into the learning environment, fostering an inclusive and enriched educational landscape. The significance of a diverse student population can be observed through several key aspects.

Enriched Learning Experiences:

Diversity within the student body contributes significantly to enriched learning experiences. Exposure to

a variety of cultural perspectives, beliefs, and traditions broadens students' horizons, encourages critical thinking, and promotes a deeper understanding of global issues. It creates an interactive space where students learn not only from academic materials but also from each other's diverse experiences and viewpoints.

Cultural Exchange and Understanding:

A diverse student population creates opportunities for cultural exchange and mutual understanding. Interactions among students from different backgrounds foster an environment of tolerance, empathy, and respect. Students learn to appreciate and celebrate cultural differences, thereby promoting a sense of unity amidst diversity.

Preparation for Global Citizenship:

In an increasingly interconnected world, exposure to a diverse student population prepares individuals to become global citizens. Students develop cross-cultural communication skills, adaptability, and cultural awareness, essential attributes for navigating a globalized workforce and addressing global challenges.

Enhanced Problem-Solving and Innovation:

Diverse perspectives stimulate creativity, innovation, and critical thinking. Collaboration among students from diverse backgrounds encourages the exploration of multiple viewpoints and approaches to problem-solving, leading to more robust and innovative solutions.

Fostering Inclusive Environments:

A diverse student population promotes inclusivity and equity within educational institutions. It creates an environment where individuals feel valued, respected, and included regardless of their cultural or socioeconomic background. This fosters a sense of belonging and contributes to positive mental health and well-being among students.

Preparation for Future Careers:

Exposure to diversity prepares students for the global workforce. The ability to work effectively in diverse teams and navigate multicultural environments is highly valued by employers. Students who engage with a diverse student population are better equipped to thrive in a diverse and competitive job market.

The significance of a diverse student population within educational institutions cannot be understated. Embracing diversity creates inclusive and dynamic learning environments, equipping students with the skills, perspectives, and attitudes necessary to thrive in a multicultural world.

Language barriers

Language barriers represent a significant challenge within diverse student populations in educational settings, often impeding effective communication, learning, and social integration. These barriers arise when individuals speak different languages or have varying proficiency levels in the language of instruction. Understanding the significance of language barriers is crucial in addressing their impact on students and the educational environment:

Hindrance to Effective Communication:

Language barriers can obstruct effective communication among students, faculty, and staff. When individuals speak different languages, misunderstandings can arise, leading to challenges in conveying ideas, expressing thoughts, and participating in discussions or collaborative activities.

Academic Challenges and Learning Gaps:

For students whose primary language differs from the language of instruction, language barriers can pose academic challenges. Limited proficiency in the language can affect comprehension, writing skills, and overall academic performance, potentially creating learning gaps that hinder educational progress.

Social Isolation and Integration Issues:

Language barriers may contribute to social isolation and integration issues. Students facing language challenges might find it difficult to engage in social interactions, participate in extracurricular activities, or integrate into the broader student community, impacting their overall sense of belonging.

Access to Resources and Support:

Limited language proficiency can hinder access to educational resources and support services. It may prevent students from fully benefiting from academic materials, seeking assistance from faculty, or utilizing academic support programs available in the institution.

Impact on Mental Health and Well-being:

Language barriers can also have implications for students' mental health and well-being. Frustration, feelings of exclusion, and a sense of inadequacy due to language challenges may lead to increased stress, anxiety, or low self-esteem among students.

Cultural and Linguistic Diversity as an Asset:

While language barriers present challenges, they also highlight the importance of embracing cultural and linguistic diversity within the student population. Encouraging multilingualism and recognizing diverse languages as assets can create a more inclusive and supportive educational environment.

Recognizing and addressing language barriers are essential steps in fostering an inclusive and supportive environment within diverse student populations. Strategies such as language support programs, cultural sensitivity training, and inclusive pedagogical approaches can mitigate the impact of language barriers, creating a more equitable and enriching educational experience for all students.

Misunderstandings and stereotypes

Misunderstandings and stereotypes are prevalent challenges within diverse student populations, often stemming from cultural differences, biases, or lack of exposure to varied perspectives. Understanding the significance of these issues is crucial in fostering an inclusive and respectful learning environment:

Impact on Interpersonal Relationships:

Misunderstandings arising from cultural differences can hinder effective communication and interpersonal relationships among students. Stereotypes, biases, or assumptions based on cultural backgrounds may lead to misconceptions, mistrust, or misinterpretations of intentions, creating barriers to positive interactions.

Barriers to Collaboration and Teamwork:

In academic settings requiring collaboration and teamwork, misunderstandings and stereotypes can hinder effective group dynamics. Preconceived notions or stereotypes about individuals from different cultures may lead to exclusion, biased decision-making, or difficulties in working together towards common goals.

Reinforcement of Bias and Discrimination:

Stereotypes perpetuate biases and discrimination within the student population. Negative stereotypes based on race, ethnicity, or cultural backgrounds can lead to unfair treatment, marginalization, or the perpetuation of harmful narratives, impacting the well-being and academic success of students.

Hindrance to Inclusive Learning Environments:

Misunderstandings and stereotypes hinder the creation of inclusive learning environments. When students face stereotypes or biases, they may feel marginalized, disengaged, or discouraged from actively participating in class discussions or academic activities, thereby affecting their learning experiences.

Contribution to Cultural Insensitivity:

Misunderstandings and stereotypes contribute to cultural insensitivity and lack of appreciation for diversity. Failure to address these issues may lead to a lack of cultural competence among students,

hindering their ability to navigate diverse social and professional contexts in the future.

Promoting Cultural Awareness and Sensitivity:

Recognizing and addressing misunderstandings and stereotypes is pivotal in promoting cultural awareness and sensitivity. Encouraging open dialogue, fostering mutual understanding, and challenging stereotypes through education and exposure can break down barriers and foster a more inclusive and respectful environment.

Addressing misunderstandings and stereotypes within diverse student populations is essential for creating inclusive, respectful, and supportive learning environments. Promoting cultural awareness, challenging biases, and fostering intercultural understanding are crucial steps toward building a diverse and harmonious student community.

Importance of addressing these challenges

Recognizing and addressing challenges within diverse student populations is crucial for fostering inclusive, equitable, and enriching educational environments. The significance lies in several key aspects:

Promoting Inclusivity and Equity:

Addressing challenges such as misunderstandings, stereotypes, and language barriers is essential for creating inclusive and equitable learning environments. It ensures that all students, regardless of their cultural, linguistic, or socio-economic backgrounds, feel valued, respected, and included within the academic community.

Fostering Intercultural Understanding:

Tackling challenges related to diversity promotes intercultural understanding and appreciation. By addressing misunderstandings and stereotypes, students develop a deeper understanding of different cultural perspectives, fostering empathy, respect, and appreciation for diversity.

Enhancing Communication and Collaboration:

Overcoming language barriers and stereotypes improves communication and collaboration among students. It encourages effective interaction, cooperation, and teamwork, facilitating an environment where diverse viewpoints contribute to more robust discussions and solutions.

Encouraging Academic Success and Well-being:

Addressing challenges within diverse student populations positively impacts academic success and well-being. Students who feel included and supported are more likely to thrive academically, leading to better learning outcomes and improved mental health.

Preparing Students for a Globalized World:

Cultivating an inclusive environment and addressing challenges prepares students for a globalized world. It equips them with essential skills such as cross-cultural communication, adaptability, and empathy, crucial for navigating diverse workplaces and societies.

Creating Safe and Supportive Environments:

Addressing challenges fosters a safe and supportive environment where students can freely express themselves without fear of discrimination or bias. It promotes a culture of respect, tolerance, and acceptance, contributing to a positive and nurturing educational atmosphere.

Embracing Diversity as an Asset:

Finally, addressing challenges underscores the value of diversity as an asset. It encourages educational institutions to embrace diverse perspectives, cultural richness, and varied experiences, enriching the learning environment and enhancing the overall educational experience for all students.

Addressing challenges within diverse student populations is essential for creating inclusive, respectful, and supportive educational environments. By acknowledging and actively working towards overcoming

these challenges, educational institutions can create environments that nurture diversity, encourage dialogue, and foster mutual understanding among students from diverse backgrounds.

Benefits of Successful Cross-Cultural Communication in Colleges

The presence of a diverse student population significantly enriches learning experiences within educational institutions, offering a multitude of benefits and opportunities for academic growth. The significance of enhanced learning experiences in diverse settings is profound, contributing to several key aspects:

Exposure to Varied Perspectives:

Diversity within the student body exposes individuals to a wide array of perspectives, beliefs, and experiences. Interacting with peers from different cultural, ethnic, and socio-economic backgrounds broadens horizons and encourages students to consider various viewpoints, fostering critical thinking and intellectual curiosity.

Stimulating Critical Dialogue and Debate:

Diversity cultivates an environment conducive to critical dialogue and debate. Students engage in discussions enriched by diverse opinions and ideas, challenging assumptions, and fostering intellectual inquiry. This diversity of thought encourages students to think critically and develop well-rounded perspectives.

Encouraging Cultural Exchange and Understanding:

Interacting with peers from diverse backgrounds fosters cultural exchange and mutual understanding. It provides opportunities for students to learn about different traditions, languages, and customs, promoting empathy, respect, and appreciation for cultural diversity.

Cultivating Innovation and Creativity:

Diverse learning environments stimulate innovation and creativity. Exposure to varied perspectives encourages students to approach problems from multiple angles, fostering innovative solutions and creative thinking. It creates a fertile ground for collaboration and ideation.

Preparation for Global Citizenship:

Enhanced learning experiences in diverse settings prepare students for global citizenship. Exposure to diverse perspectives equips students with cross-cultural communication skills, adaptability, and cultural competency necessary to thrive in an interconnected world.

Nurturing Inclusive Learning Environments:

The presence of diversity contributes to nurturing inclusive learning environments. Students from diverse backgrounds feel represented, valued, and included, fostering a sense of belonging and encouraging active participation in academic pursuits.

Enriching Personal and Academic Growth:

Ultimately, enhanced learning experiences in diverse student populations contribute to both personal and academic growth. Students develop a broader understanding of the world, embrace diverse viewpoints, and acquire the skills necessary to navigate complex societal challenges.

The significance of enhanced learning experiences within diverse student populations cannot be overstated. Such experiences foster intellectual growth, promote cultural awareness, and prepare students to thrive in an increasingly interconnected and diverse global landscape.

Improved collaboration and teamwork

Enhanced collaboration and teamwork within diverse student populations offer profound benefits, fostering an environment where students from various cultural backgrounds can effectively work together towards common goals. The significance of improved collaboration and teamwork is evident in several

key aspects:

Exposure to Diverse Perspectives:

Improved collaboration encourages students to engage with diverse perspectives. Working in teams composed of individuals from different cultural backgrounds exposes students to varied viewpoints, stimulating critical thinking and broadening their understanding of complex issues.

Synergy of Diverse Skills and Strengths:

Diverse teams leverage a spectrum of skills and strengths. Each team member brings unique abilities, experiences, and expertise to the table, fostering a dynamic environment where complementary skills can be utilized for innovative problem-solving and more comprehensive project outcomes.

Cultivation of Communication Skills:

Collaborating within diverse teams enhances communication skills. Students learn to navigate language barriers, adapt communication styles, and effectively convey ideas, promoting clearer and more inclusive communication practices.

Encouragement of Adaptability and Flexibility:

Working in diverse teams cultivates adaptability and flexibility. Students learn to embrace different working styles, adapt to cultural nuances, and appreciate diverse approaches to problem-solving, thus enhancing their adaptability in future professional settings.

Promotion of Empathy and Understanding:

Collaborative experiences encourage empathy and understanding. Engaging with peers from different cultural backgrounds fosters mutual respect, empathy, and appreciation for diverse perspectives, creating a more harmonious and supportive team dynamic.

Preparation for the Global Workplace:

Improved collaboration prepares students for the global workforce. Developing the ability to collaborate effectively in diverse teams equips students with essential skills valued in today's globalized workplace, enhancing their competitiveness and adaptability.

Achievement of Comprehensive Solutions:

Diverse teams often produce more comprehensive and innovative solutions. Combining a variety of perspectives and approaches to problem-solving leads to more holistic and creative outcomes, contributing to a richer learning experience for students.

The significance of improved collaboration and teamwork within diverse student populations extends beyond academic settings. It cultivates essential skills, promotes cultural understanding, and prepares students to thrive in collaborative, multicultural environments, laying a foundation for their success in future endeavours.

Promotion of global citizenship

Promoting global citizenship within diverse student populations is pivotal in preparing individuals to navigate an interconnected world, fostering a sense of responsibility, cultural awareness, and an understanding of global issues. The significance of promoting global citizenship is evident in several key aspects:

Cultivation of Cultural Awareness and Sensitivity:

Promoting global citizenship encourages students to develop cultural awareness and sensitivity. Exposure to diverse cultures, languages, and traditions fosters appreciation and respect for cultural differences, creating a more inclusive and empathetic worldview.

Nurturing Cross-Cultural Communication Skills:

Global citizenship initiatives enhance cross-cultural communication skills. Students learn to effectively

interact, collaborate, and communicate across cultural boundaries, acquiring essential competencies for engaging in a globalized society.

Encouragement of Open-Mindedness and Adaptability:

Embracing global citizenship fosters open-mindedness and adaptability. Students learn to navigate diverse perspectives, challenging their own assumptions and biases, thus becoming more adaptable and open to embracing differing viewpoints.

Emphasis on Global Issues and Social Responsibility:

Global citizenship initiatives emphasize awareness of global issues and social responsibility. Students are encouraged to engage in discussions on topics such as sustainability, social justice, human rights, and environmental conservation, empowering them to become active global citizens and agents of positive change.

Preparation for Multicultural Work Environments:

Promotion of global citizenship prepares students for multicultural work environments. Equipped with cultural competence and a global perspective, students are better prepared to thrive in diverse professional settings, adapting to varying cultural norms and practices.

Fostering a Sense of Global Community:

Global citizenship initiatives foster a sense of belonging to a broader global community. Students develop a sense of interconnectedness, understanding their roles in a global context and recognizing their responsibility to contribute positively to the world.

Enhancement of Critical Thinking and Problem-Solving Skills:

Engaging with global issues encourages critical thinking and problem-solving. Students analyse complex global challenges, evaluate multiple perspectives, and develop innovative solutions, enhancing their analytical skills and fostering creativity.

The significance of promoting global citizenship within diverse student populations extends beyond individual growth. It contributes to building a more interconnected and tolerant world, where individuals are equipped with the skills, knowledge, and attitudes necessary to address global challenges and embrace cultural diversity.

Enriched cultural understanding

Enriched cultural understanding within diverse student populations plays a pivotal role in fostering inclusive, respectful, and interconnected learning environments. The significance of enriched cultural understanding is evident in several key aspects:

Encouraging Appreciation for Diversity:

Enriched cultural understanding encourages students to appreciate and celebrate diversity. Exposure to various cultures, languages, and traditions promotes respect for differences, fostering a more inclusive and tolerant educational setting.

Promotion of Cross-Cultural Communication:

Cultural understanding enhances cross-cultural communication. Students develop the ability to navigate cultural nuances, adapt communication styles, and engage in meaningful dialogues with individuals from diverse backgrounds, thus promoting effective and respectful interaction.

Bridging Cultural Divides and Reducing Stereotypes:

Understanding different cultures helps bridge divides and reduces stereotypes. Students gain insights into cultural norms, values, and practices, challenging stereotypes and misconceptions that may exist, leading to a more nuanced and accurate understanding of diverse communities.

Fostering Empathy and Global Perspective:

Enriched cultural understanding fosters empathy and a global perspective. Students gain insights into the experiences and perspectives of others, fostering empathy and compassion towards individuals from different cultural backgrounds and cultivating a broader worldview.

Facilitating Interdisciplinary Learning:

Cultural understanding enriches interdisciplinary learning experiences. Students draw connections between diverse cultures and various academic disciplines, promoting interdisciplinary thinking and enhancing their understanding of complex global issues.

Preparation for Global Citizenship:

Cultural understanding prepares students for global citizenship. Equipped with cultural competence, students are better prepared to navigate diverse cultural landscapes, collaborate in global contexts, and contribute positively to a multicultural society.

Strengthening Social Cohesion and Inclusion:

An enriched understanding of diverse cultures strengthens social cohesion and inclusion. Students from different backgrounds feel valued, respected, and included, fostering a sense of belonging within the academic community.

Enriched cultural understanding within diverse student populations is essential for creating harmonious, respectful, and interconnected learning environments. It promotes empathy, fosters cross-cultural communication, and prepares students to thrive in a diverse and globalized world.

Strategies for Cultivating Successful Cross-Cultural Communication

Incorporating cultural competency training in the curriculum

Incorporating cultural competency training into the curriculum of educational institutions is crucial for preparing students to thrive in diverse and interconnected societies. The significance of this training is evident in several key aspects:

Promoting Inclusive Learning Environments:

Cultural competency training fosters inclusive learning environments. By integrating cultural awareness and sensitivity into the curriculum, educational institutions create spaces where students from diverse backgrounds feel valued, respected, and included.

Enhancing Cross-Cultural Communication Skills:

Incorporating cultural competency training enhances cross-cultural communication skills. Students develop the ability to navigate cultural differences, adapt communication styles, and engage effectively with individuals from diverse backgrounds, fostering clearer and more respectful communication.

Challenging Stereotypes and Biases:

Cultural competency training challenges stereotypes and biases. It encourages students to critically examine their own cultural assumptions and biases, fostering a more nuanced and empathetic understanding of diverse cultures.

Preparing Students for Global Citizenship:

Cultural competency training prepares students for global citizenship. Equipping them with cultural awareness and understanding enables them to navigate multicultural environments, collaborate in global contexts, and engage respectfully with individuals from different cultural backgrounds.

Encouraging Respect for Diversity and Inclusion:

Training in cultural competency encourages respect for diversity and inclusion. It promotes appreciation for different cultural perspectives, traditions, and values, fostering a culture of mutual respect and acceptance within the educational community.

Building Skills for Professional Success:

Cultural competency is increasingly valued in the workplace. Incorporating this training in the curriculum equips students with skills sought after by employers, enhancing their readiness for success in diverse professional environments.

Empowering Students as Global Leaders:

Cultural competency training empowers students to become global leaders. It cultivates leadership qualities that embrace diversity, promote inclusivity, and contribute positively to building more equitable and harmonious societies.

The incorporation of cultural competency training in the curriculum is essential for preparing students to navigate diverse and globalized societies. By embedding cultural awareness, respect, and understanding into the educational experience, institutions empower students to become culturally competent individuals and leaders in a rapidly changing world.

Organizing multicultural events, workshops, seminars and Implementing peer mentorship programs

Organizing multicultural events, workshops, seminars, and implementing peer mentorship programs within educational institutions hold immense significance in fostering inclusive, supportive, and culturally rich learning environments. The significance of these initiatives is evident in several key aspects:

Promoting Cultural Exchange and Understanding:

Multicultural events, workshops, and seminars provide platforms for students to share and celebrate their cultural heritage. These events encourage cross-cultural interactions, fostering mutual understanding, respect, and appreciation for diverse perspectives and traditions.

Enhancing Cultural Competency:

Participation in multicultural events and workshops enhances cultural competency. Students develop a deeper understanding of different cultures, traditions, and values, strengthening their ability to navigate and respect diverse viewpoints in an increasingly globalized world.

Providing Learning Opportunities:

Workshops and seminars on cultural topics offer learning opportunities. These sessions facilitate discussions on cultural diversity, social issues, and global perspectives, enriching students' knowledge and encouraging critical thinking.

Creating Supportive Networks and Communities:

Peer mentorship programs create supportive networks among students. Pairing students from diverse backgrounds fosters a sense of belonging, providing a platform for sharing experiences, offering guidance, and promoting inclusivity within the student community.

Encouraging Leadership and Collaboration:

Multicultural events and mentorship programs encourage leadership and collaboration. Students take on leadership roles in organizing events, fostering teamwork and organizational skills while promoting collaboration across cultural boundaries.

Fostering Personal and Professional Development:

Peer mentorship programs contribute to personal and professional development. Mentors provide guidance, advice, and support, empowering mentees to navigate academic challenges, build networks, and develop skills for success.

7. Preparation for Global Citizenship:

These initiatives prepare students for global citizenship. Exposure to multicultural experiences and mentorship programs equips students with the skills, knowledge, and attitudes necessary to navigate diverse and multicultural environments confidently.

Organizing multicultural events, workshops, seminars, and implementing peer mentorship programs within educational settings enriches the student experience, promotes cultural understanding, and cultivates inclusive and supportive communities. These initiatives play a pivotal role in preparing students to thrive in a diverse and interconnected world.

Utilizing technology for cross-cultural exchange

The integration of technology in facilitating cross-cultural exchange among diverse student populations plays a pivotal role in promoting global awareness, fostering connections, and enriching educational experiences. The significance of utilizing technology for cross-cultural exchange is evident in several key aspects:

Breaking Geographical Barriers:

Technology transcends geographical boundaries, allowing students from different parts of the world to engage in real-time interactions. Through virtual platforms, students can connect, share experiences, and exchange ideas, fostering a global community within educational institutions.

Enhancing Communication and Collaboration:

Digital tools facilitate seamless communication and collaboration. Video conferencing, collaborative platforms, and social media enable students to engage in discussions, work on projects, and share cultural insights, promoting meaningful interactions despite physical distance.

Exposing Students to Global Perspectives:

Online resources and digital content provide access to a wealth of diverse perspectives. Students can explore global issues, access educational materials from various cultures, and gain insights into different worldviews, broadening their understanding of global diversity.

Facilitating Cultural Immersion and Learning:

Virtual exchange programs and online cultural immersion experiences allow students to immerse themselves in different cultures. Through virtual tours, language exchange platforms, and online cultural workshops, students gain firsthand exposure to diverse traditions and practices.

Encouraging Empathy and Understanding:

Technology facilitates cross-cultural dialogue and encourages empathy. Online discussions, forums, and digital storytelling platforms enable students to share narratives, fostering empathy and understanding by highlighting shared experiences and cultural differences.

Preparing Students for Digital Global Citizenship:

Engaging in cross-cultural exchange via technology prepares students for digital global citizenship. They develop digital literacy, cross-cultural communication skills, and the ability to navigate diverse digital environments, essential for success in a globalized world.

Promoting Inclusive and Accessible Learning:

Utilizing technology ensures inclusive and accessible learning opportunities. It accommodates diverse learning styles, preferences, and needs, enabling equitable participation in cross-cultural exchange regardless of physical limitations.

Leveraging technology for cross-cultural exchange offers unparalleled opportunities for students to engage, learn, and collaborate with peers from diverse backgrounds. It fosters a global mindset, encourages intercultural understanding, and prepares students to thrive in an increasingly interconnected world.

Recommendations for Improving Cross-Cultural Communication in Colleges

Continuous evaluation and improvement of existing strategies

Continuously evaluating and improving existing strategies within diverse student populations is integral to fostering an inclusive, supportive, and enriching educational environment. The significance lies in several key aspects:

Ensuring Effectiveness and Relevance:

Regular evaluation allows educational institutions to assess the effectiveness and relevance of existing strategies. It enables the identification of strengths and weaknesses, facilitating necessary adjustments to meet the evolving needs of a diverse student body.

Enhancing Cultural Competency Initiatives:

Evaluation aids in enhancing cultural competency initiatives. Assessing the impact of programs, workshops, and events helps fine-tune content, delivery methods, and learning outcomes, ensuring they align with the objectives of promoting cultural awareness and sensitivity.

Addressing Emerging Challenges:

Continuous evaluation enables proactive responses to emerging challenges. Identifying new issues, concerns, or barriers faced by students from diverse backgrounds allows institutions to adapt strategies and implement targeted interventions to address these challenges.

Engaging Stakeholders for Feedback:

Evaluation invites feedback from stakeholders, including students, faculty, and staff. Gathering input from diverse perspectives offers insights into the effectiveness of strategies, ensuring they resonate with the needs and expectations of the entire educational community.

Measuring Impact and Outcomes:

Evaluation measures the impact and outcomes of implemented strategies. It provides empirical data to gauge the success of initiatives in promoting cultural understanding, fostering inclusivity, and enhancing students' overall experiences.

Encouraging Continuous Learning and Growth:

Evaluative processes encourage a culture of continuous learning and growth. By analyzing successes and areas for improvement, educational institutions foster a commitment to ongoing development, fostering innovation and creativity in addressing diversity-related challenges.

Supporting Evidence-Based Decision-Making:

Evaluation supports evidence-based decision-making. Data-driven insights derived from evaluations assist in making informed decisions regarding resource allocation, program enhancements, and the implementation of new initiatives to better serve the diverse student population.

Continuous evaluation and improvement of existing strategies within diverse student populations are essential for maintaining relevance, effectiveness, and responsiveness to the ever-evolving needs of students. It ensures that educational institutions remain adaptable, inclusive, and committed to providing a supportive learning environment for all.

Encouraging faculty and staff involvement

Encouraging faculty and staff involvement in initiatives aimed at supporting diverse student populations plays a pivotal role in creating an inclusive and supportive educational environment. The significance of their involvement is evident in several key aspects:

Role Modelling Inclusivity and Support:

Faculty and staff involvement sets an example of inclusivity and support. Their active participation in multicultural events, mentorship programs, and workshops sends a strong message of encouragement, demonstrating the institution's commitment to diversity and inclusion.

Enhancing Cultural Understanding and Sensitivity:

Involvement of faculty and staff contributes to enhanced cultural understanding. Through engagement in cross-cultural exchanges and interactions with diverse students, they gain insights into different perspectives, fostering cultural sensitivity and awareness.

Providing Supportive Networks and Guidance:

Faculty and staff involvement offers valuable support and guidance to diverse student populations. Establishing mentorship relationships, offering academic advice, and providing resources create a supportive network that helps students navigate challenges and achieve their academic goals.

Contributing to Inclusive Teaching and Learning:

Involved faculty contribute to inclusive teaching practices. Their awareness of diverse student needs enables them to adapt teaching methods, content, and assessments to create equitable and engaging learning experiences for all students.

Creating Opportunities for Dialogue and Engagement:

Faculty and staff involvement creates spaces for dialogue and engagement. Their active participation in discussions on diversity-related topics and hosting forums encourages open communication, promoting a deeper understanding of diverse perspectives.

Fostering Trust and Belonging:

Faculty and staff involvement fosters a sense of trust and belonging. Establishing connections and building rapport with diverse student populations creates an environment where students feel valued, respected, and supported in their academic journey.

Strengthening the Institutional Commitment to Diversity:

Active involvement of faculty and staff reinforces the institutional commitment to diversity. Their participation in diversity initiatives demonstrates a collective effort towards creating an inclusive environment that celebrates and respects differences.

Encouraging faculty and staff involvement in initiatives supporting diverse student populations is fundamental in creating a welcoming and supportive educational community. Their engagement contributes significantly to fostering inclusivity, providing support, and enhancing the overall educational experience for all students.

Collaborating with external organizations or communities

Collaborating with external organizations or communities holds immense significance in enriching the educational experience and providing additional support and resources for diverse student populations. The importance of these collaborations is multifaceted:

Access to Specialized Resources and Expertise:

Partnerships with external organizations provide access to specialized resources and expertise. Students benefit from unique learning materials, workshops, mentorship programs, or guest lectures that supplement their academic curriculum.

Exposure to Diverse Perspectives and Cultures:

Collaborations offer exposure to diverse perspectives and cultures. Engaging with external communities or organizations broadens students' horizons, fostering cross-cultural understanding and preparing them for a globalized world.

Enhanced Career Development Opportunities:

Collaborations facilitate career development opportunities. Through internships, networking events, or career fairs organized by external entities, students gain practical skills, industry insights, and networking connections essential for their future careers.

Supporting Community Engagement and Service Learning:

Partnerships encourage community engagement and service learning. Students actively participate in community-based projects or initiatives, contributing positively to societal needs and gaining valuable hands-on experiences.

Enriching Research and Academic Collaborations:

Collaborations enrich research and academic collaborations. Partnerships with external organizations may lead to joint research projects, grants, or access to specialized facilities, fostering academic growth and innovation.

Strengthening Diversity and Inclusion Initiatives:

Collaborations reinforce diversity and inclusion initiatives. Partnering with organizations focused on diversity promotes an inclusive environment within the institution, enhancing support systems and fostering a sense of belonging for all students.

Creating Opportunities for Holistic Development:

Collaborations create opportunities for holistic student development. Beyond academics, students engage in extracurricular activities, volunteer work, or leadership programs, nurturing their personal and professional growth.

Collaborating with external organizations or communities significantly enhances the educational experience for diverse student populations. These partnerships contribute to creating a comprehensive and supportive environment that nurtures academic, personal, and professional development.

Conclusion: Fostering an Inclusive Educational Environment for Diverse Student Populations

The journey towards creating an inclusive and supportive educational environment for diverse student populations involves a multifaceted approach encompassing several strategies. Each strategy plays a crucial role in nurturing a community where all students feel valued, respected, and empowered to succeed.

Promoting Diversity and Inclusion Initiatives:

Initiatives promoting diversity and inclusion serve as foundational pillars, fostering an environment that celebrates differences and respects individual identities. These initiatives, including multicultural events, workshops, and mentorship programs, create avenues for cross-cultural understanding and mutual respect among students.

Cultural Competency and Continuous Learning:

Cultivating cultural competency through continuous learning initiatives ensures that faculty, staff, and students possess the skills and understanding needed to navigate diverse environments. Continuous evaluation and improvement of strategies further enhance cultural competency, allowing for adaptability and responsiveness to emerging challenges.

Technology Integration and External Collaborations:

Leveraging technology for cross-cultural exchange and partnering with external organizations or communities expand the horizons of educational experiences. Through technological tools and collaborations, students gain access to diverse resources, real-world learning opportunities, and specialized expertise that enriches their academic journey.

Faculty and Staff Involvement:

Encouraging faculty and staff involvement is fundamental in setting the tone for an inclusive

environment. Their active participation in initiatives, mentorship programs, and inclusive teaching practices contributes to creating a welcoming space where diverse perspectives are valued and respected.

Conclusion:

In conclusion, the significance of these strategies cannot be overstated. Collectively, they foster an environment where diverse student populations feel supported, engaged, and empowered. By embracing diversity, integrating cultural understanding, leveraging technology, and engaging all stakeholders, educational institutions can create a vibrant and inclusive ecosystem that prepares students to thrive in a globally interconnected society.

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3. Research Papers:

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"The Impact of Faculty Diversity on Students' Educational Outcomes" by A. Milem and S. Berger in the *Journal of Diversity in Higher Education*.

4. Websites and Reports:

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Influence of Artificial Intelligence on Human Resource Management: A Descriptive Analysis to Locate the Turnarounds

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Abstract

The impact of artificial intelligence (AI) on decision-making and procedures related to human resource management (HRM) is examined in this article. The aim is to present a descriptive analysis that understands how AI is changing HRM so that problems can be identified and advantages can be maximised. The article discusses how AI can be used to automate repetitive administrative HR duties such as interview scheduling, resume screening, employee query resolution, employee data documentation, and offer letter writing. This allows HR personnel to concentrate on more strategic tasks. Large workforce datasets' AI analytics and insights also support data-driven decision-making on matters like attrition prediction, high performance identification, hiring bias mitigation, remuneration optimisation, and customised learning initiatives. The article also identifies some possible drawbacks to utilising AI in HRM, including the possibility of job security threats and bias reinforcement. Strong data governance, ethical AI design as a top priority, proper training for HR professionals on AI systems, and proactive workforce effect mitigation are the main recommended solutions to handle these AI concerns.

Keywords: Human resource management, influence, Artificial intelligence

Introduction

Artificial intelligence is a swiftly advancing technology that is transforming many different businesses as well as aspects of our everyday lives. Human resource management is one area in which AI is starting to influence significantly. Artificial intelligence (AI) systems are getting better at automating HR procedures and decision-making. This could result in increases in efficiency, accuracy, and fairness. But there are also worries about possible job displacement, moral issues, and the requirement for human oversight in decision-making processes as a result of the increasing integration of AI in HRM. Descriptive analysis is therefore essential to comprehend the impact of AI on HRM and to pinpoint possible solutions to deal with the issues and reap the rewards of this technology (Finkelstein & McCleery 2006).

The design and development of computers and systems that are capable of carrying out tasks that ordinarily call for human intelligence are known as artificial intelligence or AI. Artificial Intelligence (AI) comprises a range of technologies, including computer vision, natural language processing, and machine learning, that allow machines to analyse data, learn from it, and make decisions on their own. Recent years have seen tremendous progress in the field of artificial

intelligence, which has led to its integration into different sectors and industries, including human resource management.

AI has the power to completely transform HR procedures by streamlining repetitive work, facilitating better decision-making through data analysis, and raising employee happiness and engagement levels. However, the use of AI in HR also brings up ethical questions and the possibility of job displacement. In order to fully utilise AI's benefits and handle any related issues, it is imperative to comprehend its capabilities, limitations, and prospective effects on HR practices as it continues to develop (Ertel 2018). Human resource management has been significantly impacted by artificial intelligence (AI) in a number of important ways, and the present article will explore them.

Method and Methodology

With the objective to compile knowledge and points of view from several secondary sources regarding the influence of artificial intelligence on human resource management, this study uses a qualitative method of literature analysis. This makes it possible to conduct a comprehensive descriptive analysis of the present and future implications of AI on HRM policies and practices. Finding and gathering pertinent published papers, industry reports, and expert studies on the nexus between AI technology and HRM functions comprised the literature search technique. A number of databases were examined, including Emerald Insight, Business Source Complete, and Google Scholar. Google search was also used to look up grey literature for market research studies on AI in HRM. The papers that examined automation, analytics, algorithms, machine learning, natural language processing, robotics, or intelligent systems in the context of talent acquisition, workforce development, employee relations, people analytics, compensation, or general HRM digital transformation within the last five years was the primary inclusion criterion. Sources offering evaluations of actual AI case studies in enterprises, doable AI plans and best practices, information on AI adoption trends, and a fair assessment of benefits and hazards were carefully gathered.

Key themes and high-level topic groups were identified using inductive open coding to categorise the content and close reading of the texts. Coded parts were contrasted to extract formative evaluations, revelatory descriptions, and higher-level notions related to AI's transformative impact on HRM. Developing new models and conceptual generalisations on enhancing human-AI collaboration in organisational workforce decision-making and policy execution, based on gathered insights from the literature, was the main goal of the qualitative synthesis. The centralised headings that structure the literature review are informed by themes that emerged from the inductive analysis. These headings lead the reader through the current HRM functions that AI is augmenting, future innovations, ongoing challenges that require interventions, and anticipated future directions within this domain.

Automating repetitive tasks

Plenty of tedious, repetitive HR chores, like screening resumes, setting up interviews, responding to routine employee inquiries, updating personnel databases, setting up meetings, and creating offer letters, can now be automated. HR specialists are able to concentrate on more strategic work as a result. Today, artificial intelligence (AI) and machine learning are present in almost every company function, revolutionising procedures and freeing up human labour for more critical tasks. Due to its ability to automate tedious administrative activities, this technology has drastically altered the role of human resources (HR) in organisations (Bersin 2018). AI-driven HR systems are reaching new heights of productivity by quickly and accurately managing repetitive, high-volume workforce-related tasks.

Building an AI-enabled workforce was prioritised by 79% of CEOs, and more businesses than ever before are trying to automate HR, according to Deloitte's 2022 Global Human Capital Trends

study. The market for AI in HR reached \$580 million in 2021, according to Global Data (2021), indicating the increasing dependence on these tools. This market expansion demonstrates how AI automation in HR may give a competitive edge in addition to removing laborious chores. Scalable resume and application screening are vital benefits of AI software (Raj & Seamans 2019). Intelligent algorithms may rapidly scan applications and select prospective applicants based on a match to the essential competencies, eliminating the need for HR people to labour through mountains of data. AI significantly shortens hiring wait times by handling massive amounts of applications quickly. Early-stage screening automation also saves human labour, allowing HR managers to concentrate on evaluating the soft skills and cultural fit of shortlisted candidates.

In addition to screening, virtual assistants such as Myra, Olivia, and Sterling automate workforce queries regarding payroll, leave requests, and expense claims (Anders 2022). These AI-powered chatbots answer questions from employees around the clock via various communication channels. For instance, in 2021, a chatbot for workforce services company UKG handled more than 1.2 million inquiries, enabling HR personnel to handle complicated situations. Virtual agents free up HR staff time by providing prompt answers to frequently asked employee queries, allowing them to focus on more valuable work.

Scheduling interviews, evaluations, and recruit orientation programs is another laborious staffing task that AI systems excel at (SHRM 2020). Automated scheduling software can automatically determine the best times for meetings and manage the calendars of numerous candidates or new hires. Artificial intelligence scheduling helps HR professionals save hours of logistical wrangling by eliminating the annoying back-and-forth communications. Additionally, by using these technologies, candidates' frustrations with the hiring process are reduced.

Similarly, AI helps HR managers by safely and reliably populating vital personnel databases. According to Anders (2022), approximately 75% of worldwide HR leaders admitted that it can be challenging to balance strategic goals with the need to keep accurate, up-to-date worker information databases. Nevertheless, clever data processing systems can fill linked HR systems and collect employment information with ease. By doing this, errors and duplications that would require HR workers to spend a lot of time reviewing and correcting are avoided. Document builder platforms such as Qwilr generate personalised offer letters based on business logic and standardised templates, which are adapted to each candidate's role specifications, location, income, and other factors ("AI in HR" 2022). By use of input prompts, these artificial intelligence technologies efficiently draft labour contracts, optimising legal language and vocabulary to reduce employer risk. By automating this type of documentation, HR employees can stop copying and pasting individual letters.

With the introduction of AI automation, HR departments can now become leaders in their organisations' digital transformations instead of only doing monotonous administrative tasks. AI is freeing up HR staff capacity to concentrate on delivering strategic goals around people analytics, leadership development, and workplace innovation by managing bulk candidate applications, employee data updates, chat queries, scheduling, and document preparation. According to McKinsey, this creative HR transformation made possible by AI automation has even increased personnel productivity by up to 65% and given top global firms a competitive edge (Bersin, Madgavkar & Pelster 2017).

Analytics and insights

In order to assist with tasks like anticipating attrition risks, recognising high performers, detecting bias in hiring methods, optimising compensation plans, and developing focused learning programs, artificial intelligence systems may analyse employee data, spot patterns, and offer insights. Decision-making becomes increasingly data-driven as a result. Artificial intelligence and machine

learning have revolutionised HR analytics by offering never-before-seen insight into workforce trends and enabling accurate, data-driven decision-making. In order to reinforce workforce decisions throughout the employee lifetime, 71% of executives evaluated AI analytics as a vital goal, according to Deloitte's 2022 Global Human Capital Trends report (Ortiz-Canton et al. 2022). With the help of sophisticated algorithms and large datasets that reveal subtleties in performances, behaviours, and HR systems, artificial intelligence gives managers precise, up-to-date insights to maximise key areas of people management.

As McKinsey emphasises, finding attrition risks by analysing several engagement metrics months before turnover is a crucial use of AI analytics (Chui et al., 2018). Using the objective classification of flight-risk probabilities for each employee, prediction models do not rely on conjecture about which workers would quit. This makes it possible to implement focused, proactive interventions like enhanced manager-employee relationships, growth routes, or retention incentives. Several organisations have reported that AI attrition analysis has over 80% prediction accuracy (IBM 2020). By using such data-backed insights to stop regrettable voluntary departures, productivity is safeguarded along with acquired intellectual capital.

AI technologies use performance data and aptitude exams to categorise present top talent and future high-potential employees, in addition to retention risks. In order to quantitatively measure employee capability, Bersin (2021) claims that AI assesses factors including accomplishments, competencies, learning agility, and leadership qualities. Businesses may identify budding stars more quickly with high-potential classification by providing training, stretch assignments, and other opportunities for advancement. Organisations can cultivate individuals most likely to thrive in leadership positions by quantitatively differentiating their workforce divisions.

Reducing any unconscious or conscious bias in hiring is essential for fair employment practices. AI systems that do blind audits reveal any inclinations toward preferential selection based on factors like gender, age, race, or academic background (Raschka et al. 2021). When names and demographics are removed from applications, AI may evaluate eligibility just on the basis of skills, giving scoring that is free from bias. These audits encourage diversity and guard against biased screening. The application of anti-bias AI analytics has significantly raised minority group representations in a variety of industries, including banking, technology, manufacturing, and education (SHRM 2020).

Employing AI-enabled market insights on pay parity, organisations create benefit and compensation plans. According to Gartner (Bakewell 2021), AI that taps into crowdsourced compensation data offers unmatched benchmarking visibility instead of constrained survey samples. Employing these insights to guide compensation promotes employee retention by keeping top personnel compliant with industry norms. Managers are further empowered by AI data to design fair, customised pay increases and stock awards that are based on the individual worth of each reporting employee.

AI learning recommendations for teams and individual workers provide an ongoing upskilling culture aligned with organisational objectives. In order to construct courses that are relevant to the needs of the company, individual learners, and the value of the content, sophisticated learning experience platforms (LXP) such as EdCast, Degreed, and Udemy Business gather a lot of data (SHRM 2021). Workers are coached in accordance with the organisation's reskilling program and receive recommended microlearning that is in line with their individual knowledge gaps. LinkedIn's 2021 Workplace Learning Report states that 94% of forward-thinking L&D executives have either already used AI-powered learning analytics or have plans to do so in the near future.

Personalised Learning through AI

In a context of perpetual change, companies may foster creativity, increase productivity, and retain top talent more successfully by investing in effective employee learning and development programs (Cavanaugh 2020). With the use of artificial intelligence tools, employees can now receive individualised learning assistance in order to reskill in accordance with changing corporate priorities. Using AI algorithms, personalised learning tracks an employee's abilities, knowledge, interests, and actions to build training and development plans that are specific to their requirements and objectives. Individualised learning opportunities have been linked to increased employee engagement, empowerment, and productivity (Bersin, 2019). In order to deliver the appropriate content through the best possible combination of formats, channels, and schedules, AI and machine learning approaches can compile a profile of each learner.

Building a rich skills and behavioural profile for each employee is the cornerstone of a personalised learning system. AI systems are able to gather pertinent information from a variety of sources, such as previously completed training, manager feedback, skill assessments, project experiences, performance evaluations, and day-to-day job activities. For instance, to map out each employee's area of competence, Lexion, an AI-powered skills inference platform, uses machine learning and natural language processing algorithms on corporate documents and systems (Lexion 2022). AI is able to generate a sophisticated skills graph that is updated in real time by utilising large datasets.

AI recommendation engines can begin by creating suitable learning routes for each employee that correspond with more comprehensive talent development strategies when a skills inventory has been established (Smith et al. 2020). In order to address any skills shortages, the algorithms match current competencies to those needed for future planned projects and provide tailored recommendations for leadership programs, training, or stretch assignments (Bersin 2019). In order to present the most relevant new possibilities based on each employee's unique fit, machine learning looks at the kinds of professional development programs from which they have previously profited. Additionally, according to Smith et al. (2020), AI systems can direct staff members to co-workers whose talent profiles suggest they would be the most qualified to offer coaching or mentoring. This promotes cooperation and the exchange of knowledge. With each update to their skills profile or comment on suggested development activities, the AI model gradually increases employees' personal relevance.

By customising the learning process to each employee's preferences, AI-powered personalised learning also maximises the delivery of training materials to each employee (Lexion 2022). Among the options are distributing programs in various formats (e.g., micro-learning videos, online courses, or virtual instructor-led sessions), increasing the dependence on specific channels of communication that correspond with usage patterns (e.g., emails, collaboration tools, or mobile notifications); and modifying the speed or scheduling of content. Workers are still free to ignore advice from the system or change formats as needed. To make sure efficacy stays high, the AI algorithms also use automated evaluations to check comprehension and track learners' levels of engagement during learning activities in real time (Cavanaugh 2020). Reduced completion rates of specific training modules may lead to the modification of the content or the provision of alternatives. Compared to conventional one-size-fits-all methods, this continuous refining of learning delivery based on employee input and behaviours yields more excellent business outcomes from skill development investments.

Although AI-enabled customisation technologies can alter organisational learning and development, they come with upfront and continuing costs, but the benefits can be significant. Measurably successful talent development is provided by organisations that use data and algorithms to map pertinent skills-building opportunities and comprehend the individual demands of each employee. Employees are no longer overworked or overwhelmed with knowledge or unrelated training. In order to prevent widening skill gaps, leadership can continuously realign competencies with strategic goals

by using data-driven insights (Smith et al. 2020). Personalised learning makes employees feel valued, and companies build workforces that are ready for the future and can adapt to rapidly changing markets.

Challenges of Implementing AI

The possibility of bias in decision-making is one of the difficulties in integrating artificial intelligence into human resource management. For AI systems to generate predictions and suggestions, data and algorithms are necessary, but the algorithms themselves have the potential to reinforce preexisting biases in the data they are trained on. An AI system may unintentionally make biased recruiting or promotion decisions, for instance, if it is trained on past employee data that exhibits gender or racial prejudices. This problem was brought to light by a study that discovered that racial and gender biases can be reinforced by AI systems employed in HRM. Organisations must properly assess, track, and manage the data used to train AI systems in order to overcome this difficulty, as well as devise plans to reduce bias. Transparency in AI decision-making is also necessary to guarantee accountability and justice. In general, a major obstacle to the effective application of AI in HRM is the possibility of bias in AI systems (Chilamkurti, Sood, Grima, Tyagi & Balamurugan 2023).

Strategies to Address Challenges

Optimising the benefits of artificial intelligence in human resource management can be significantly aided by strategies that solve obstacles and maximise AI's potential. Creating a data management system that works well and protects employee privacy and accuracy is one tactic. The effective application of AI in HRM depends on safe and open data processing. Giving priority to the moral and responsible application of AI technologies is another tactic. Establishing precise rules and regulations is essential to preventing prejudice and discrimination in hiring and employee evaluation procedures as AI systems become more advanced.

Researchers Crawford, Dobbe, Dryer, Fried, Green, Kaziunas, Kak, Mathur, McElroy, Sanchez, Raji, Rankin, Richardson, Schultz, and Whittaker (2019) at the AI Now Institute state that businesses should actively reduce any adverse effects of AI systems and carefully consider any potential biases. Furthermore, HR professionals must promote a culture of ongoing education and skill development in order to successfully negotiate the challenges of AI deployment. HR departments can successfully use AI for HRM by investing in training and development programs that give them the information and skills they need. By solving issues and maximising AI's potential in HRM, these tactics help to improve organisational effectiveness and worker happiness (Pathak, Anchal, Rana and Shikha 2020).

Conclusion

Through automation, AI is assisting in the transformation of HR into a more strategic, responsive, and employee-centric role while also relieving administrative constraints. AI is being used by businesses more and more to enhance HR procedures and improve decision-making. HRM procedures can be automated with the help of AI technologies, such as machine learning and natural language processing, which will improve accuracy and efficiency. AI can help with talent management and acquisition as well. It does this by forecasting future labour requirements and analysing vast volumes of data to find the best applicants. Nevertheless, there are obstacles to overcome when implementing AI in HRM, including moral issues and the requirement for human supervision. HR specialists will need to develop the abilities required to properly utilise these technologies and adjust to the rapidly evolving AI world. AI has the ability to completely transform HRM procedures, but its use and effects on the workforce need to be carefully considered (Sprague 1848).

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FINTECH AND DIGITAL TRANSFORMATIONS OF FINANCIAL SERVICES DURING POST PANDEMIC PERIOD IN INDIA

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INTRODUCTION

Each sector has been impacted by COVID-19, which has changed how it operates, and the fintech business is no different. Many businesses are using new strategies to deal with and save their businesses as the majority of fintech organisations struggle with the COVID-19 pandemic's shocks. In the middle of the pandemic, it has caused a shift in payment habits and opened the door for artificial intelligence to mimic human touch in payment-related interactions. Although the fintech industry conjures up thoughts of start-ups and rapidly changing technology, traditional businesses and banks are still actively utilising these services for their own needs. Fintech, or financial technology, refers to any software that provides financial services, including internet banking, mobile payment apps, and even cryptocurrencies. Fintech is a broad category that includes a variety of technology, but its main goals are to alter how people and businesses access their finances and to compete with established financial institutions.

Fintech platforms make it possible to perform routine chores like check deposits, money transfers between accounts, bill payments, and financial aid applications. Additionally, they enable complex technical ideas like peer-to-peer lending and cryptocurrency exchanges.

Fintech is used by businesses to process payments, conduct e-commerce, handle accounting, and, more recently, assist with government aid programmes like the Payroll Protection Program (PPP). Following the Covid-19 pandemic, an increasing number of companies are resorting to fintech to accept contactless payments or implement other tech-driven innovations.

The government has introduced a number of innovative fintech solutions that have been successful, including the Immediate Payments Service (IMPS), Unified Payments Interface (UPI), Bharat Interface for Money (BHIM), Bharat Bill Pay System (BBPS), and Aadhaar-enabled Payment System (AePS). Fintech companies and banks both make use of these goods or interfaces. Financial inclusion, regtech (technology for regulatory function), supotech (technology for supporting regulatory supervisory role), and sandbox infrastructure for fintech innovators are some of the focus areas of the Reserve Bank of India, a central bank.

Financial intermediation is another name for financial services. Financial intermediation is the method by which money is raised from a lot of savers and made available to everyone who needs it, especially corporate clients. A variety of institutions offer financial services. Banks, investment firms, accounting firms, financial institutions, merchant banks, leasing firms, venture capital firms, factoring firms, mutual funds, etc. are a few of the institutions. These organisations offer corporate enterprises a range of services. These are referred to as financial services. Therefore, financial services refer to the services provided by financial service organisations to industrial firms and to final consumer markets. These are the facilities and services needed for the financial markets to run smoothly.

2.3 OBJECTIVES OF THE STUDY:

- 1) To understand the importance of fintech and digitalization with regard to development of financial services.
- 2) To find out the advantages of fintech and digitalization of financial services in the development of financial system.
- 3) To examine the various fintech and digital innovations after pandemic.
- 4) To study the impact of pandemic on the fintech and digitalization of financial services in India.
- 5) To understand post pandemic-new opportunities for Fintech companies.

2.5 REVIEW OF LITERATURE:

Gupta & Agrawal (2021) researched the information on India's FinTech and how it affects the country's financial sector. The analysis showed that a variety of reasons are to blame for changing the Indian Financial System's landscape. These elements encourage consumers to choose FinTech venture services over those provided by conventional financial institutions. The data also showed that the adoption rate of FinTech was lower prior to the global health outbreak but much higher and more pervasive afterwards. The findings also show a favourable correlation between the global COVID-19 pandemic breakout and FinTech adoption by end users. As a result, it suggests that the rate of FinTech adoption has significantly grown, which points to greater financial inclusion and evolution.

Mallick (2021) studied on the major changes that the fintech revolution will bring about are discussed in this paper. Another important subject to comprehend is how far from the financial services sector has come. This study seeks to visualise such ideas so that readers may comprehend the impact of Fintech advances on the sector. According to the study's findings, the fintech revolution has had a tremendous impact on the financial services sector and is playing several important roles in revolutionising financial services.

Gulati (2021) explained the numerous measures implemented by the RBI and GOI in 2020 to support company digital transformation, as well as the difficulties encountered in 2020 and the potential for Fintech in 2021. The success stories of the top five Indian Fintech companies during the Covid epidemic are also covered in this chapter. These companies overcame obstacles to succeed in the current environment.

Nair et al., (2021) gave a brief understanding of the changes that have occurred in the Fintech industry as a result of COVID-19's effects in India. The research paper discusses the various fintech industry segments and the changes that COVID-19 has implemented to support the industry's post-pandemic growth in India.

Meenal, Deepak, Pratima (2020) The research report makes several policy recommendations to enhance financial inclusion before, during, and after a lockdown in the COVID 19 crisis. An international health epidemic called COVID 19 may benefit from certain standard global remedies, such as greater financial inclusion. To increase financial access and support vulnerable people and households, financial inclusion continues to be a key development instrument. In COVID-19, financial inclusion and fintech solutions may prove to be one of the most efficient ways to address the economic difficulties that arise both during and after a lockdown. The COVID-19 dilemma may be lessened in impact by the offered legislative solutions for financial inclusion and digital finance mechanisms.

Harikumar & Pallathadka (2022) study examines the specific contribution that Fintech has made to the growth of the financial industry. According to the advantages or disadvantages the countries may experience and what the finance industry may resemble in the future, a brief history of fintech services and the primary driver of their explosive expansion is also pertinent to the study.

This definition is thorough and focuses on innovation that improves company operations and has a tangible effect. The term "FinTech" (sometimes: fintech, fin-tech, or Fintech) is a neologism that derives from the words "financial" and "technology" and broadly refers to the interaction between contemporary and Internet-related technologies (such as cloud computing, mobile Internet) and long-standing business activities of the financial services sector (such as transaction banking, money lending). (Gomber, 2018).

According to Vinay Kandipal and Rajat Mehrotra (2019) The fundamental idea is that Fintech evolved more out of need than innovation, mostly as a result of advances in the field of finance services and the explosive rise of technology. The combination of technology with financial services in this case implies that a number of platforms and applications are being created to make it simple for you to use financial services, such as applying for online personal loans or business loans, among others.

Fintech is typically thought of as the creative delivery of financial services using contemporary technology. A new financial sector called fintech uses technology to advance financial operations (Schueffel, 2016).

A startup, tech company, or financial institution in the financial sector that uses technology to enhance financial operations. A financial innovation known as "FinTech" is one that is made possible by technology

and may lead to new business models, applications, processes, goods, or services, all of which may have a meaningful impact on financial markets, institutions, and the supply of financial services. (Schindler, 2017)

According to Thakor fintech employs the use of technology to carry out financial tasks more quickly and effectively. Financial services remain at the same price. Over the previous century, it has stayed at 2%. Over time, both productivity and mortgage lending have grown. The first trans-Atlantic cable was laid in 1866, and telegrams were first sent in 1967. These are the three phases of fintech. ii) From 1967 to 2008 (the beginning of ATMs, online banking, and electronic payments) iii) 2008 to the present (more competitiveness and technical advancement). (Tokor ,2019).

According to a report done by Deloitte India, India is one of the top five marketplaces for fintech startups, with a value of 270 million dollars in 2016 through investments and capital funding. India's fintech industry has a lot of potential for growth. i) The growth of fintech businesses results in cost reductions and an improvement in the services they offer. ii) Fintech businesses have developed a variety of methods to evaluate the risk involved in determining a customer's credit score based on their credit history. iii) Unlike banks, fintech businesses provide additional services that are effective, secure, and help to enhance workplace culture. (India, 2017).

Fintech is a technology that supports all financial services and that all financial services are for people. Finance technology will handle money automatically for societal improvement. Business prospects will grow as a result of these advances. This is accomplished by coordinating all financial organisations to offer the finest financial services possible to clients while reducing costs and increasing service offerings. It gathers information and offers financial services to the public. As a result, company reliability, likelihood, and efficiency all rise. (Sharma, 2016).

Guruprasad (2020) claims that the Indian banking industry has adapted technological advancements, particularly information technology, to achieve productivity in offering the consumers a wide range of products and services. The reforms of the 1990s brought about a lot of changes and difficulties, including the expansion of the banking and financial sector, privatisation, and liberalisation in India. With cutting-edge technology, a number of private and foreign businesses joined the Indian industry and successfully served their consumers through a variety of channels, including internet banking and ATMs. The effort of reforming the financial sector now includes the technology infrastructure as a crucial component.

Fintech is a broad idea that uses technology to organise and provide financial goods to clients in accordance with their preferences and convenience, according to Matthew Blake, Peter Vanham, and Dustin Hughes. Fintech is now being used by both established and new financial institutions. The Financial Industry Regulatory Authority, Consumer Financial Protection Bureau, Office of the Comptroller of the Currency,

Securities Exchange Board of India, Federal Deposit Insurance Corporation, and other organisations work to regulate and safeguard the interests of investors and customers (Blak & Hughes, 2016).

2.7 RESEARCH METHODOLOGY:

Collected information are on the basis of both primary and secondary data.

- Primary data is collected from questionnaires with the use of Google forms.

DATA ANALYSIS

TABLE 4.1 AGE OF THE RESPONDENTS

Particulars	No. of Respondents	Percentage
18-25 years	65	55.6 %
26-40 years	38	32.5 %
41-55 years	09	7.7 %
Above 56 years	05	4.3%
Total	117	100%

From the above table 4.1 it is understood that out of 117 respondents, the age group of 18-25 years; 65 members (55.6%) has responded to the Fintech Survey followed by the age group 26-40 years; 38 members (32.5%), 41-55 years; 09 members (7.7%) and the age group above 56 years; 05 members (4.3%).

TABLE 4.2 GENDER OF THE RESPONDENTS

Particulars	No. of Respondents	Percentage
Male	56	47.9 %
Female	61	52.1 %
Total	117	100 %

According to the above table 4.2 out of 117 respondents, 52.1% (61) are the female and 47.9% (56) are the male who responded to the survey.

TABLE 4.3 EMPLOYMENT STATUS OF THE RESPONDENTS

Particulars	No. of Respondents	Percentage
Student	49	41.9 %
Inservice	36	30.8 %
Own Business	26	22.2 %
Home Maker	04	3.4 %
Retired	02	1.7 %
Total	117	100 %

According to the above table 4.3 out of 117 respondents, students were 41.9% (49) followed by Inservice 30.8% (36); own business 22.2% (26); homemakers 3.4% (04) and retired 1.7% (02) responded to the survey.

TABLE 4.4 MARITAL STATUS OF THE RESPONDENTS

Particulars	No. of Respondents	Percentage
Married	57	48.7 %
Unmarried	60	51.3 %
Total	117	100 %

According to the above table 4.4 out of 117 respondents, Unmarried were 51.3% (60); married 48.7% (57) responded to the survey.

TABLE 4.5 HOW WOULD THE RESPONDENTS USE MOBILE BANKING IN INDIA

Particulars	No. of Respondents	Percentage
Very low	02	1.7 %
Low	01	0.9 %
Average	09	7.7 %
High	56	47.9 %
Very High	49	41.9 %
Total	117	100 %

According to the above table 4.5 out of 117 respondents, 47.9% (56) are high in use of mobile banking, forwarded by the 41.9% (49) are very high; 7.7% (09) are average; 1.7% (02) are very low and 0.9% (01) low in usage of mobile banking in India.

TABLE 4.6 DOES ONLINE MOBILE PAYMENTS IS EASY WAY TO IMPROVE BUSINESS

Particulars	No. of Respondents	Percentage
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Yes	115	98.3 %
No	02	1.7 %
Total	117	100 %

According to the above table 4.6 out of 117 respondents, 98.3 % (115) said yes to online mobile payments is easy way to improve business and 1.7% (02) said no to the online mobile payments is easy way to improve business.

TABLE 4.7 WHICH TECHNOLOGY HAS THE GREATEST IMPACT ON THE FINANCIAL SERVICES INDUSTRY DURING THE PANDEMIC

Particulars	No. of Respondents	Percentage
Banking	80	68.4 %
Insurance	08	6.8 %
Securities	25	21.4 %
Asset Management	04	3.4 %
Total	117	100%

According to the above table 4.7 out of 117 respondents, 68.4% (80) responded to banking as the greatest impact on the financial services industry during the pandemic, followed by 21.4% (25) responded to the securities as the greatest impact on the financial services industry during the pandemic; 6.8% (08) responded to the Insurance as the greatest impact on the financial services industry during the pandemic; 3.4% (04) responded Asset management as the greatest impact on the financial services industry during the pandemic.

TABLE 4.8 HOW DID COVID-19 AFFECTED THE USAGE OF DIGITAL APPS

Particulars	No. of Respondents	Percentage
Yes, I started using after Covid-19	06	5.1 %
Yes, my usage increased during Covid-19	78	66.7 %
No, I was using it before	31	26.5 %
No, I don't use even now	00	0 %
No, I used these apps before Covid-19	02	1.7 %
Total	117	100 %

According to the above table 4.8 out of 117 respondents, 66.7% (78) responded that their usage of digital apps increased during Covid-19; followed by 26.5% (31) responded that they were using it before; 5.1% (06) responded that they started using digital apps after Covid-19; 1.7% (02) responded that they used digital apps before Covid-19.

TABLE 4.9 MODE OF TRANSACTIONS USED BY THE RESPONDENTS

Particulars	No. of Respondents	Percentage
Cash - based	08	6.8 %
Cash - less	109	93.2 %
Total	117	100 %

According to the above table 4.9 out of 117 respondents, 93.2% (109) used cash – less mode of transactions; followed by 6.8% (08) used cash – based mode of transaction.

TABLE 4.10 IF RESPONDENTS ANSWER TO PREVIOUS QUESTION WAS CASH-LESS THEN WHICH APP

THEY USED

Particulars	No. of Respondents	Percentage
Phonepe	43	37.1 %
Google pay	31	26.7 %
Paytm	21	18.1 %
Net Banking	13	11.2 %
Credit Card	08	6.9 %
Total	117	100 %

According to the above table 4.10 out of 117 respondents, 37.1% (43) responded they used phonepe; followed by 26.7% (31) responded they used google pay; 18.1% (21) responded they used Paytm; 11.2% (13) responded they used net banking and 6.9% (08) used credit card as cash – less transactions.

TABLE 4.11 HOW FINTECH APPLICATIONS HELPED RESPONDENTS DURING THE PANDEMIC

Particulars	No. of Respondents	Percentage
Easy/quick process	64	54.7 %
Convenient	30	25.6 %
More secure	23	19.7 %
Total	117	100%

According to the above table 4.11 out of 117 respondents, 54.7% (64) responded Easy/quick process; followed by 25.6% (30) responded convenient and 19.7% (23) responded more secure of Fintech applications helped them in secure during the pandemic.

TABLE 4.12 HOW ARTIFICIAL INTELLIGENCE (AI) IN BANKING AND INSURANCE HAS MADE IT SAFE FOR RESPONDENTS

Particulars	No. of Respondents	Percentage
Strongly disagree	03	2.6 %
Disagree	00	00 %
Neutral	05	4.3 %
Agree	56	47.9 %
Strongly agree	53	45.3 %
Total	117	100 %

According to the above table 4.12 out of 117 respondents, 47.9% (56) agreed; followed by 45.3% (53) strongly agreed; 4.3% (05) responded neutral and 2.6% (03) strongly disagreed to Artificial Intelligence (AI) in banking and insurance has made it safe.

TABLE 4.13 IS FINTECH SERVICE GOOD ALTERNATIVE FOR HUMAN ADVISORS

Particulars	No. of Respondents	Percentage
Strongly disagree	05	4.3 %
Disagree	01	0.9 %
Neutral	07	6 %
Agree	54	46.2 %
Strongly agree	50	42.7 %

Total	117	100 %
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According to the above table 4.13 out of 117 respondents, 46.2% (54) agreed; followed by 42.7% (50) strongly agreed; 6% (07) responded neutral; 4.3% (05) strongly disagreed and 0.9% (01) disagreed to Fintech service is a good alternative for human advisors.

TABLE 4.14 HOW FINTECH SERVICES HAVE MADE LIFE EASY

Particulars	No. of Respondents	Percentage
Strongly disagree	03	2.6 %
Disagree	03	2.6 %
Neutral	07	6 %
Agree	52	44.4 %
Strongly agree	59	50.4 %
Total	117	100 %

According to the above table 4.14 out of 117 respondents, 50.4% (59) strongly agreed; followed by 44.4% (52) agreed; 6% (07) responded neutral; 2.6% (03) disagreed and 2.6% (03) strongly disagreed to Fintech services have made life easy.

TABLE 4.15 HOW FINTECH HELPS IN BRINGING MORE MONEY INTO CIRCULATION

Particulars	No. of Respondents	Percentage
Strongly disagree	05	4.3 %
Disagree	01	0.9 %
Neutral	03	2.6 %

Agree	51	43.6 %
Strongly agree	57	48.7 %
Total	117	100 %

According to the above table 4.15 out of 117 respondents, 48.7% (57) strongly agreed; followed by 43.6% (51) agreed; 4.3% (05) strongly disagreed; 2.6% (03) responded neutral and 0.9% (01) disagreed to Fintech helps in bringing more money into circulation.

TABLE 4.16 HOW FINTECH WAS HELPFUL FOR PROVIDERS OF FINANCIAL SERVICES, INDIVIDUALS AND BUSINESSES TO GET ALONG DURING PANDEMIC

Particulars	No. of Respondents	Percentage
Strongly disagree	03	2.6 %
Disagree	00	0.0 %
Neutral	04	3.4 %
Agree	44	37.6 %
Strongly agree	66	56.4 %
Total	117	100 %

According to the above table 4.16 out of 117 respondents, 56.4% (66) strongly agreed; 37.6% (44) agreed; 3.4% (04) responded neutral; 2.6% (03) strongly disagreed to Fintech was helpful for providers of financial services, individuals and businesses to get along during pandemic.

FINDINGS AND RECOMMENDATIONS:

The analysis shows that out of 117 respondents, majority responded age group is 18-25 years; 65 members (55.6%); followed by the 26-40 years; 38 members (32.5%), 41-55 years; 09 members (7.7%) and the age group above 56 years; 05 members (4.3%).

Based on the study out of 117 respondents, majority are the female 52.1% (61) and 47.9% (56) male who responded to the survey.

As per data out of 117 respondents, major were students 41.9% (49) followed by Inservice 30.8% (36); own business 22.2% (26); homemakers 3.4% (04) and retired 1.7% (02) responded to the survey.

The data shows out of 117 respondents, major was Unmarried 51.3% (60); and married 48.7% (57) responded to the survey.

The analysis shows out of 117 respondents, 47.9% (56) are high in use of mobile banking, forwarded by the 41.9% (49) are very high; 7.7% (09) are average; 1.7% (02) are very low and 0.9% (01) low in usage of mobile banking in India.

The analysis shows out of 117 respondents, 98.3 % (115) said yes to online mobile payments is easy way to improve business and 1.7% (02) said no to the online mobile payments is easy way to improve business.

The analysis shows out of 117 respondents, 68.4% (80) responded to banking as the greatest impact on the financial services industry during the pandemic, followed by 21.4% (25) responded to the securities as the greatest impact on the financial services industry during the pandemic; 6.8% (08) responded to the Insurance as the greatest impact on the financial services industry during the pandemic; 3.4% (04) responded Asset

management as the greatest impact on the financial services industry during the pandemic.

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As per data out of 117 respondents, 56.4% (66) strongly agreed; 37.6% (44) agreed; 3.4% (04) responded neutral; 2.6% (03) strongly disagreed to Fintech was helpful for providers of financial services, individuals, and businesses to get along during pandemic.

As per the secondary data analysis the usage of digital bill payments; digital payment transactions were rapidly increased by 88% since the COVID-19 pandemic.

RECOMMENDATIONS:

The financial services sector has seen significant changes as a result of digitization and computerization. There is a trend toward the growth of direct relationships between financial resource suppliers and recipients, in addition to the operation of conventional financial intermediaries.

The digital and technological revolution transformed business operations across all industries, and the financial and banking sector is no exception. What is heartening is that the Indian government and regulatory institutions have in effect promoted an entrepreneurial rather than obstructive climate for Fintech in India. However, policies and governance will need to match the speed of innovation in this sector, particularly to ensure secure and transparent growth.

Future growth in digital payments is probably going to be steady. The rural economy and the small and medium-sized companies (SME) sector may be relatively sluggish adopters that will provide the next push for the adoption of digital payments. Government incentives like rebates on digital GST payments and the establishment of accelerator programmes would give the economy a boost.

Business to business (B2B) payments, Electronic Clearance Service (ECS) requirements, equated monthly instalments (EMIs), person to government payments (P2G) in smart cities, etc., are a few particular examples that might arise. These are probably going to have a favourable effect on transaction volume size in the future

CONCLUSION:

Financial transactions are now more accessible and user-friendly thanks to fintech, which has also boosted the financial services industry. Both customers and businesses are benefited especially in its usage which is very easy for them to use, making their work easier and to run them smoothly. By offering various financial services to the customers in the digital mode has come up with lot of value add-ons and also with other benefits to them like saving their valuable time, cost effective, providing comfort sitting at one place than been in a crowded area. Fintech firms have significantly influenced the banking services in terms of reduction of paperwork especially getting the KYC process done from the investors by lessening the paperwork process and making the investors' jobs simpler. The entry of Fintech industry has come as a boom and has brought significant changes in the banking sector contributing the industry to financial inclusion which was one of the biggest challenges put forward to the banks in the banking industry. Many Indian business houses are doing their business through various digital applications like BHIM and UPI which are available at different platforms. With the help of

technology and creativity, fintech has transformed the banking industry and is expanding more quickly than ever. The foundation of enterprises is rapidly changing to include digital money. Due to this, fintech companies must actively address worries about online business dangers. Fintech was created in response to the 2008 financial crisis, and it has since developed. The study concludes that fintech is playing a number of crucial roles in transforming financial services by looking into new ways to develop ground-breaking business models, improving customer satisfaction levels, assisting financial services through digital transformations. It is helpful for financial service providers, individuals, and businesses, providing smooth and easy banking services, and offering creative solutions to insurance schemes. Additionally, it has been shown that the fintech revolution has had a substantial influence on changing the financial services sector.

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Emerging Trends In Digital Payments During Post-Pandemic: Deriving Empirical Examples

From BBPS & NPCI

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Abstract

Each sector has been impacted by COVID-19, which has changed how it operates, and the fintech business is no different. Many businesses are using new strategies to deal with and save their businesses as the majority of fintech organisations struggle with the COVID-19 pandemic's shocks. In the middle of the pandemic, it has caused a shift in payment habits and opened the door for artificial intelligence to mimic human touch in payment-related interactions. Although the fintech industry conjures up thoughts of start-ups and rapidly changing technology, traditional businesses and banks are still actively utilising these services for their own needs.

Keywords: Fintech, COVID-19, payment-related interactions

INTRODUCTION

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- 5) To understand post pandemic-new opportunities for Fintech companies.

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Gupta & Agrawal (2021) researched the information on India's FinTech and how it affects the country's financial sector. The analysis showed that a variety of reasons are to blame for changing the Indian Financial System's landscape. These elements encourage consumers to choose FinTech venture services over those provided by conventional financial institutions. The data also showed that the adoption rate of FinTech was lower prior to the

global health outbreak but much higher and more pervasive afterwards. The findings also show a favourable correlation between the global COVID-19 pandemic breakout and FinTech adoption by end users. As a result, it suggests that the rate of FinTech adoption has significantly grown, which points to greater financial inclusion and evolution.

Mallick (2021) studied on the major changes that the fintech revolution will bring about are discussed in this paper. Another important subject to comprehend is how far from the financial services sector has come. This study seeks to visualise such ideas so that readers may comprehend the impact of Fintech advances on the sector. According to the study's findings, the fintech revolution has had a tremendous impact on the financial services sector and is playing several important roles in revolutionising financial services.

Gulati (2021) explained the numerous measures implemented by the RBI and GOI in 2020 to support company digital transformation, as well as the difficulties encountered in 2020 and the potential for Fintech in 2021. The success stories of the top five Indian Fintech companies during the Covid epidemic are also covered in this chapter. These companies overcame obstacles to succeed in the current environment.

Nair et al., (2021) gave a brief understanding of the changes that have occurred in the Fintech industry as a result of COVID-19's effects in India. The research paper discusses the various fintech industry segments and the changes that COVID-19 has implemented to support the industry's post-pandemic growth in India.

Meenal, Deepak, Pratima (2020) The research report makes several policy recommendations to enhance financial inclusion before, during, and after a lockdown in the COVID 19 crisis. An international health epidemic called COVID 19 may benefit from certain standard global remedies, such as greater financial inclusion. To increase financial access and support vulnerable people and households, financial inclusion continues to be a key development instrument. In COVID-19, financial inclusion and fintech solutions may prove to be one of the most efficient ways to address the economic difficulties that arise both during and after a lockdown. The COVID-19 dilemma may be lessened in impact by the offered legislative solutions for financial inclusion and digital finance mechanisms.

Harikumar & Pallathadka (2022) study examines the specific contribution that Fintech has made to the growth of the financial industry. According to the advantages or disadvantages the countries may experience and what the finance industry may resemble in the future, a brief history of fintech services and the primary driver of their explosive expansion is also pertinent to the study.

This definition is thorough and focuses on innovation that improves company operations and has a tangible effect. The term "FinTech" (sometimes: fintech, fin-tech, or Fintech) is a neologism that derives from the words

"financial" and "technology" and broadly refers to the interaction between contemporary and Internet-related technologies (such as cloud computing, mobile Internet) and long-standing business activities of the financial services sector (such as transaction banking, money lending). (Gomber, 2018).

According to Vinay Kandipal and Rajat Mehrotra (2019) The fundamental idea is that Fintech evolved more out of need than innovation, mostly as a result of advances in the field of finance services and the explosive rise of technology. The combination of technology with financial services in this case implies that a number of platforms and applications are being created to make it simple for you to use financial services, such as applying for online personal loans or business loans, among others.

Fintech is typically thought of as the creative delivery of financial services using contemporary technology. A new financial sector called fintech uses technology to advance financial operations (Schueffel, 2016).

A startup, tech company, or financial institution in the financial sector that uses technology to enhance financial operations. A financial innovation known as "FinTech" is one that is made possible by technology and may lead to new business models, applications, processes, goods, or services, all of which may have a meaningful impact on financial markets, institutions, and the supply of financial services. (Schindler, 2017)

According to Thakor fintech employs the use of technology to carry out financial tasks more quickly and effectively. Financial services remain at the same price. Over the previous century, it has stayed at 2%. Over time, both productivity and mortgage lending have grown. The first trans-Atlantic cable was laid in 1866, and telegrams were first sent in 1967. These are the three phases of fintech. ii) From 1967 to 2008 (the beginning of ATMs, online banking, and electronic payments) iii) 2008 to the present (more competitiveness and technical advancement). (Tokor ,2019).

According to a report done by Deloitte India, India is one of the top five marketplaces for fintech startups, with a value of 270 million dollars in 2016 through investments and capital funding. India's fintech industry has a lot of potential for growth. i) The growth of fintech businesses results in cost reductions and an improvement in the services they offer. ii) Fintech businesses have developed a variety of methods to evaluate the risk involved in determining a customer's credit score based on their credit history. iii) Unlike banks, fintech businesses provide additional services that are effective, secure, and help to enhance workplace culture. (India, 2017).

Fintech is a technology that supports all financial services and that all financial services are for people. Finance technology will handle money automatically for societal improvement. Business prospects will grow as a result of these advances. This is accomplished by coordinating all financial organisations to offer the finest financial services possible to clients while reducing costs and increasing service offerings. It gathers information and offers

financial services to the public. As a result, company reliability, likelihood, and efficiency all rise. (Sharma, 2016).

Guruprasad (2020) claims that the Indian banking industry has adapted technological advancements, particularly information technology, to achieve productivity in offering the consumers a wide range of products and services. The reforms of the 1990s brought about a lot of changes and difficulties, including the expansion of the banking and financial sector, privatisation, and liberalisation in India. With cutting-edge technology, a number of private and foreign businesses joined the Indian industry and successfully served their consumers through a variety of channels, including internet banking and ATMs. The effort of reforming the financial sector now includes the technology infrastructure as a crucial component.

Fintech is a broad idea that uses technology to organise and provide financial goods to clients in accordance with their preferences and convenience, according to Matthew Blake, Peter Vanham, and Dustin Hughes. Fintech is now being used by both established and new financial institutions. The Financial Industry Regulatory Authority, Consumer Financial Protection Bureau, Office of the Comptroller of the Currency, Securities Exchange Board of India, Federal Deposit Insurance Corporation, and other organisations work to regulate and safeguard the interests of investors and customers (Blak & Hughes, 2016).

2.7 RESEARCH METHODOLOGY:

Collected information are on the basis secondary data.

BBPS (BHARAT BILL PAYMENT SYSTEM)

Bharat Bill payment system is a Reserve Bank of India (RBI) conceptualised ecosystem driven by National payments corporation of India (NPCI). It is a one-stop ecosystem for all recurring bills providing an interoperable and accessible “Anytime Anywhere” recurring payment service to all customers across India with certainty, reliability, and safety of transactions.

Growth of BBPS:

In the financial year 2021, Bharat Bill Payment System (BBPS) had over 430 billion Indian rupees worth of transactions across India. The value was estimated to rise to over four trillion Indian rupees in financial year 2026 in the country.

Growth of BBPS since pandemic:

Financial Year 2020-2021

Growth of BBPS from April 2020 to March 2021

Month	Value (In Cr)	Percentage Change
Apr-20	1371.17	
May-20	2178.72	58.89495832
Jun-20	2,969.66	36.30296688
Jul-20	3,707.44	24.84392153
Aug-20	3,782.47	2.023768422
Sep-20	3,920.83	3.657927227
Oct-20	3961.41	1.034984939
Nov-20	3713.21	-6.265445889
Dec-20	3,898.77	4.997293447
Jan-21	4,051.91	3.927905468
Feb-21	4,222.37	4.206904892
Mar-21	5,195.76	23.05316682

Source: (<https://www.bharatbillpay.com/statistics>, 2022)

According to the figure 4.17 the highest transactions was in the month of March 2021 (5195.76 Cr Cr); and the lowest was in the month of April 2020 (1371017 Cr).

Financial Year 2021-2022

Growth of BBPS from April 2021 to March 2022

Month	Value (In Cr)	Percentage Change
Apr-21	5,201.92	
May-21	6,270.31	20.53837814
Jun-21	7,934.71	26.54414216
Jul-21	9,612.87	21.14960723
Aug-21	10,307.40	7.225001482
Sep-21	12027.06	16.68374178
Oct-21	10530.2	- 12.44576813
Nov-21	10,222.84	- 2.918842947
Dec-21	10,338.41	1.130507765
Jan-22	10,082.75	- 2.472914113
Feb-22	9,974.50	- 1.073615829
Mar-22	11,467.46	14.96776781

Source: (<https://www.bharatbillpay.com/statistics>, 2022)

According to the figure 4.18 the highest transactions was in the month of September 2021 (12,027.06 Cr); and the lowest was in the month of April 2021 (5201.92 Cr).

Financial Year 2022-2023

Growth of BBPS from April 2022 to July 2022

Month	Value (In Cr)	Percentage Change
Apr-22	11,324.11	
May-22	13,824.11	22.07679014
Jun-22	15,153.94	9.619642784
Jul-22	16,217.56	7.018768716

Source: (<https://www.bharatbillpay.com/statistics>, 2022)

According to the figure 4.19 the highest transactions was in the month of July 2022 (16217.56 Cr); and the lowest was in the month of April 2021 (11324.11 Cr).

UNIFIED PAYMENTS INTERFACE (UPI)

The Unified Payments Interface (UPI) is a system that integrates various bank accounts, smooth fund routing, and merchant payments into a single mobile application (of any participating bank). Additionally, it supports "Peer to Peer" collect requests that may be planned and paid for according to need and convenience.

As per the data sourced from National Payments Corporation of India (NPCI), India's own payment platform, UPI has emerged as the country's favourite digital payment choice, with over 22 billion transactions registered during FY 2020-21, showing 4 times growth over the last 3 years. Also, AePS inter-bank transactions during FY 2020-21 registered a 9-fold growth, over the past 4 years.

GROWTH OF UPI TRANSACTIONS SINCE PANDEMIC:

Growth of UPI transactions since pandemic

Month	No. of banks live on	Value (In Cr)	PERCENTAGE CHANGE
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	UPI		
Mar-20	148	2,06,462.31	
Apr-20	153	1,51,140.66	-26.79503586
May-20	155	2,18,391.60	44.49559768
Jun-20	155	2,61,835.00	19.89243176
Jul-20	164	2,90,537.86	10.96219375
Aug-20	168	2,98,307.61	2.674264208
Sep-20	174	3,29,027.66	10.2981114
Oct-20	189	3,86,106.74	17.34780596
Nov-20	200	3,90,999.15	1.267113338
Dec-20	207	4,16,176.21	6.439159778
Jan-21	207	4,31,181.89	3.605607346
Feb-21	213	4,25,062.76	-1.419152831
Mar-21	216	5,04,886.44	18.77926921
Apr-21	220	4,93,663.68	-2.222828563
May-21	224	4,90,638.65	-0.612771432
Jun-21	229	5,47,373.17	11.56340211
Jul-21	235	6,06,281.14	10.76193961
Aug-21	249	6,39,116.95	5.415937893
Sep-21	259	6,54,351.81	2.383735872

Oct-21	261	7,71,444.98	17.89452833
Nov-21	274	7,68,436.11	-0.390030408
Dec-21	282	8,26,848.22	7.601427007
Jan-22	297	8,31,993.11	0.622229071
Feb-22	304	8,26,843.00	-0.619008732
Mar-22	314	9,60,581.66	16.17461356
Apr-22	316	9,83,302.27	2.365297085
May-22	323	10,41,506	5.919210377
Jun-22	330	10,14,384	-2.604113658
Jul-22	338	10,62,747	4.7677211

Source: (www.npci.org.in , 2022)

GROWTH OF DIGITAL TRANSACTIONS IN INDIA SINCE 2018-2019

As a result of the initiatives taken by the Government, there has been a paradigm shift in digital transactions in India. The paradigm shift is reflected in terms of the increase in the volume of digital transactions over the last three financial years as illustrated below:

Table 4.21 Growth digital transactions during the last 3 years since 2018-19.

Financial Year	Volume (in lakhs)
2018-19	2,32,602
2019-20	3,40,025

2020-21	4,37,445
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As observed from the above table 4.20, there has been a growth of 88% in volume of digital transactions during the last 3 years since 2018-19.

FINDINGS AND RECOMMENDATIONS:

The analysis shows that out of 117 respondents, majority responded age group is 18-25 years;65 members (55.6%); followed by the 26-40 years; 38 members (32.5%), 41-55 years; 09 members (7.7%) and the age group above 56 years; 05 members (4.3%).

Based on the study out of 117 respondents, majority are the female 52.1% (61) and 47.9% (56) male who responded to the survey.

As per data out of 117 respondents, major were students 41.9% (49) followed by Inservice 30.8% (36); own business 22.2% (26); homemakers 3.4% (04) and retired 1.7% (02) responded to the survey.

The data shows out of 117 respondents, major was Unmarried 51.3% (60); and married 48.7% (57) responded to the survey.

The analysis shows out of 117 respondents, 47.9% (56) are high in use of mobile banking, forwarded by the 41.9% (49) are very high; 7.7% (09) are average; 1.7% (02) are very low and 0.9% (01) low in usage of mobile banking in India.

The analysis shows out of 117 respondents, 98.3 % (115) said yes to online mobile payments is easy way to improve business and 1.7% (02) said no to the online mobile payments is easy way to improve business.

The analysis shows out of 117 respondents, 68.4% (80) responded to banking as the greatest impact on the financial services industry during the pandemic, followed by 21.4% (25) responded to the securities as the greatest impact on the financial services industry during the pandemic; 6.8% (08) responded to the Insurance as the greatest impact on the financial services industry during the pandemic; 3.4% (04) responded Asset management as the greatest impact on the financial services industry during the pandemic.

The analysis shows out of 117 respondents, 66.7% (78) responded that their usage of digital apps increased during Covid-19; followed by 26.5% (31) responded that they were using it before; 5.1% (06) responded that they started using digital apps after Covid-19; 1.7% (02) responded that they used digital apps before Covid-19.

The analysis shows out of 117 respondents, 93.2% (109) used cash – less mode of transactions; followed by 6.8% (08) used cash – based mode of transaction.

The analysis shows out of 117 respondents, 37.1% (43) responded they used phonepe; followed by 26.7% (31) responded they used google pay; 18.1% (21) responded they used Paytm; 11.2% (13) responded they used net banking and 6.9% (08) used credit card as cash – less transactions.

The analysis shows out of 117 respondents, 54.7% (64) responded Easy/quick process; followed by 25.6% (30) responded convenient and 19.7% (23) responded more secure of Fintech applications helped them in secure during the pandemic.

The analysis shows out of 117 respondents, 47.9% (56) agreed; followed by 45.3% (53) strongly agreed; 4.3% (05) responded neutral and 2.6% (03) strongly disagreed to Artificial Intelligence (AI) in banking and insurance has made it safe.

The analysis shows out of 117 respondents, 46.2% (54) agreed; followed by 42.7% (50) strongly agreed; 6% (07) responded neutral; 4.3% (05) strongly disagreed and 0.9% (01) disagreed to Fintech service is a good alternative for human advisors.

Based on the data out of 117 respondents, 50.4% (59) strongly agreed; followed by 44.4% (52) agreed; 6% (07) responded neutral; 2.6% (03) disagreed and 2.6% (03) strongly disagreed to Fintech services have made life easy

The analysis shows out of 117 respondents, 48.7% (57) strongly agreed; followed by 43.6% (51) agreed; 4.3% (05) strongly disagreed; 2.6% (03) responded neutral and 0.9% (01) disagreed to Fintech helps in bringing more money into circulation.

As per data out of 117 respondents, 56.4% (66) strongly agreed; 37.6% (44) agreed; 3.4% (04) responded neutral; 2.6% (03) strongly disagreed to Fintech was helpful for providers of financial services, individuals, and businesses to get along during pandemic.

As per the secondary data analysis the usage of digital bill payments; digital payment transactions were rapidly increased by 88% since the COVID-19 pandemic.

RECOMMENDATIONS:

The financial services sector has seen significant changes as a result of digitization and computerization. There is a trend toward the growth of direct relationships between financial resource suppliers and recipients, in addition to the operation of conventional financial intermediaries.

The digital and technological revolution transformed business operations across all industries, and the financial and banking sector is no exception. What is heartening is that the Indian government and regulatory institutions have in effect promoted an entrepreneurial rather than obstructive climate for Fintech in India. However, policies and governance will need to match the speed of innovation in this sector, particularly to ensure secure and transparent growth.

Future growth in digital payments is probably going to be steady. The rural economy and the small and medium-sized companies (SME) sector may be relatively sluggish adopters that will provide the next push for the adoption of digital payments. Government incentives like rebates on digital GST payments and the establishment of accelerator programmes would give the economy a boost.

Business to business (B2B) payments, Electronic Clearance Service (ECS) requirements, equated monthly instalments (EMIs), person to government payments (P2G) in smart cities, etc., are a few particular examples that might arise. These are probably going to have a favourable effect on transaction volume size in the future

CONCLUSION:

Financial transactions are now more accessible and user-friendly thanks to fintech, which has also boosted the financial services industry. Both customers and businesses are benefited especially in its usage which is very easy for them to use, making their work easier and to run them smoothly. By offering various financial services to the customers in the digital mode has come up with lot of value add-ons and also with other benefits to them like saving their valuable time, cost effective, providing comfort sitting at one place than been in a crowded area. Fintech firms have significantly influenced the banking services in terms of reduction of paperwork especially getting the KYC process done from the investors by lessening the paperwork process and making the investors' jobs simpler. The entry of Fintech industry has come as a boom and has brought significant changes in the banking sector contributing the industry to financial inclusion which was one of the biggest challenges put forward to the banks in the banking industry. Many Indian business houses are doing their business through various digital applications like BHIM and UPI which are available at different platforms. With the help of technology and creativity, fintech has transformed the banking industry and is expanding more quickly than ever. The foundation of enterprises is rapidly changing to include digital money. Due to this, fintech companies must actively address worries about online business dangers. Fintech was created in response to the 2008 financial crisis, and it has since developed. The study concludes that fintech is playing a number of crucial roles in transforming financial services

by looking into new ways to develop ground-breaking business models, improving customer satisfaction levels, assisting financial services through digital transformations. It is helpful for financial service providers, individuals, and businesses, providing smooth and easy banking services, and offering creative solutions to insurance schemes. Additionally, it has been shown that the fintech revolution has had a substantial influence on changing the financial services sector.

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Business Discourse in the Era of Artificial Intelligence: Navigating the Shifts in Practice

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Abstract

The emergence of artificial intelligence (AI) technology, like natural language processing and machine learning, is drastically changing how organisations interact and run. AI systems will affect many facets of business communication, such as writing, presentations, e-mails, and meetings, as they become more incorporated into procedures and decision-making. The present article examines the ways in which changes in AI are influencing corporate communication. The way information is disseminated within businesses is changing as a result of AI's ability to provide written content, graphics and analytical recommendations. This article provides an integrated perspective on this by synthesising research from the fields of information systems, management and communication studies.

Keywords: business, English, discourse and AI era.

Introduction

The vocabulary, communication styles and tactics used in a business setting are referred to as business discourse. It includes several things, including cooperation, negotiation, problem-solving and communication, both internally and externally. The language used in corporate discourse has significantly changed in the AI era, highlighting data-driven decision-making and incorporating AI terms. Increased human-AI collaboration as a result of AI integration has an effect on corporate culture and brand image, as well as communication inside enterprises. It has made the creation of formal language and calculated communication techniques necessary. Effective corporate discourse has become increasingly dependent on feedback, performance appraisal and building a strong brand image and reputation.

AI terminology has become a crucial component of business communication (Shroff 2016). As AI algorithms analyse vast volumes of data to offer insights and recommendations, data-driven decision-making has become increasingly important (Probst, et al. 2018). Effective internal and external communication is crucial to guarantee that team members and stakeholders comprehend and accept the significance of AI in corporate operations (Alagaraja & Ward 2021). When discussing AI-related subjects and methods, professionals are also required to speak professionally (Daas 2018). Furthermore, to win over the confidence and support of their target audience, businesses must clearly communicate their AI strategy, objectives and ethical considerations (Deloitte 2020). This shows that there is a shift in discourse produced within the business context due to the influence of AI technologies. Therefore, the present article intends to trace this shift in the production of business discourse in the era of artificial intelligence.

Method

The present article adopts a qualitative approach using document analysis as the primary research method. In order to uncover important themes, patterns and correlations, a thorough analysis and interpretation of the text on corporate communication in the AI era must be done (O'Leary, 2004). Based on the available information, the document analysis method can be used to gain a thorough picture of how corporate speech has evolved (Bowen, 2009). The methodology employs a focused approach to content analysis. Through the use of directed content analysis as the methodology and document analysis as the primary approach, this descriptive study seeks to shed light on the ways in which AI technologies are changing the way that business discourse is discussed. The qualitative research looks at how AI terminology is integrated, how data-driven decisions are becoming more important, how human-AI collaboration is developing, and how strategic communication is needed in this changing environment (Bowen, 2009). References support critical conclusions about how AI has transformed communication strategies in contemporary commercial contexts.

Integration of AI Terminology

In the age of AI, it is becoming more and more crucial to incorporate AI language into business conversations. Businesses are adopting phrases and concepts linked to artificial intelligence (AI) into their strategy and communications as the technology develops. This covers a variety of terminologies, including deep learning, neural networks, machine learning, and natural language processing. For instance, shopping websites like Amazon leverage machine learning to offer customised suggestions predicated on past purchases (Forbes 2017). Chatbots and other AI systems that can comprehend, interpret and produce human language are referred to as natural language processing (NLP) (Harvard Business Review 2021).

Deep learning uses multiple-layered artificial neural networks to enable more complex learning, like facial recognition (MIT 2022). AI systems can recognise, evaluate and comprehend digital photos and videos (Nvidia, 2022). It can interpret, comprehend, and translate spoken language (Forbes 2018). To interpret text data, such as customer feedback, text analysis uses NLP techniques such as entity extraction, sentiment analysis and classification (SAS, 2021). An AI programme that can use natural language processing (NLP) to have text or voice conversations with people is called a chatbot (Oracle, 2022). Professionals may explain and comprehend the potential and impact of AI in a variety of business scenarios by using such AI language. It also facilitates communication and cooperation amongst people with varying degrees of AI experience and comprehension.

Data-driven decision-making is becoming more important in business discourse in the AI era. Businesses depend increasingly on analytics and data to help them make strategic decisions. This change results from the realisation that data may offer insightful information and be used to forecast trends, empowering companies to make better decisions. Businesses can quickly and accurately analyse massive datasets by leveraging AI technologies, revealing patterns and trends that would not be obvious to human analysts working alone. This data-driven strategy improves overall business performance and competitiveness in the market in addition to decision-making.

Data is used to inform and direct corporate strategy, operations and decision-making in a data-driven approach (Sathi, 2012). For example, a shop can improve its marketing spend across many platforms by implementing a data-driven approach. Customer data is initially gathered by the business through social media, e-mail campaigns, mobile apps, websites and in-store encounters. The data is then analysed using advanced analytics and AI techniques to determine consumer categories based on demographics, past purchases and engagement indicators (Kumar et al., 2013). The retailer receives practical, fact-based advice on optimising marketing strategies and expenditures from this data-driven strategy.

AI in collecting and analysing data

The use of artificial intelligence (AI) in data collection and analysis has received a lot of attention in the development of corporate discourse. Businesses can now gather and evaluate data in a completely new way, which empowers them to make data-driven decisions. Businesses can get a competitive edge by utilising AI algorithms, which can effectively handle vast volumes of data and extract insightful information (Robotic Process Automation 2021). Artificial intelligence (AI) enables businesses to streamline operations and spot trends and patterns that might not be obvious to humans by automating data collecting and analysis procedures.

Data-driven decision-making has changed how businesses interact and communicate, significantly impacting corporate discourse. Businesses may now make deft judgements based on precise and timely data. Because professionals now depend on data to back up their claims and

recommendations, there has been a shift in discourse and communication towards evidence-based and strategic approaches. The focus on data-driven decision-making has also encouraged human-AI collaboration, with both parties collaborating on data analysis and interpretation. Because of this, the business discourse has improved in efficiency and effectiveness, empowering businesses to accomplish their objectives and make wise decisions that foster expansion and success.

Human-AI collaboration is becoming more and more common in today's commercial environment. Businesses may gain more important insights, make more informed decisions, and eventually spur growth and innovation in their respective industries by fusing the strengths of AI and humans. Harnessing the combined strengths of AI and humans is a critical advantage in commercial communication. Although AI systems are highly proficient at handling vast quantities of data and providing recommendations based on that data, humans are endowed with intangible attributes such as creativity, emotional intelligence and critical thinking. Humans and AI systems can complement one another through collaboration, resulting in more comprehensive and well-informed decision-making processes (Miller, 2019). In addition, this kind of cooperation can improve an organisation's capacity for creativity, efficiency and competitiveness (Brynjolfsson & McAfee, 2014).

Effective human-AI collaboration necessitates coordination and open communication between AI systems and team members. Effective external communication is crucial for businesses to communicate with clients, partners and stakeholders. To preserve trust and professionalism in business conversations, professional language is essential. To match collaborative efforts with company objectives, strategic communication is required. Effective teamwork and negotiation skills are also essential for a successful working relationship. In corporate discourse, internal communication is essential. It entails staff members inside an organisation exchanging ideas, information and feedback. Good internal communication makes it easier to collaborate, make decisions, solve problems and create a corporate culture that is all-encompassing. AI integration can improve internal communication by enabling AI-powered tools for project management, document sharing and real-time messaging. As a result, the organisation can operate with greater productivity, efficiency and transparency (Gurari & Miller, 2019).

Business internal communication procedures have been entirely altered by AI. Organisations can automate and streamline internal communication channels through the incorporation of artificial intelligence (AI) technologies, such as virtual assistants and chatbots. Routine chores like meeting scheduling, query responding and update provision can be handled by AI-powered systems, freeing up workers to concentrate on higher-value work. Better internal communication efficiency fosters more productivity and collaboration inside the company, which eventually improves business results (Smith 2022). Here are some common examples of internal communication in organisations:

- E-mails: E-mail is one of the most common methods for communicating information within an organisation. E-mails can be used for things like company newsletters, important announcements, updates from leadership, etc.
- Intranet: Many companies have an internal intranet site or portal where employees can access company information, resources, databases, policies, discussion forums, etc. The intranet facilitates information sharing across the organisation.
- Team meetings: Regular team meetings allow managers to communicate key information to their team members. Meetings also provide a forum for discussion and addressing team matters.
- Instant messaging: IM and chat platforms like Slack, Microsoft Teams, etc. enable quick communication between employees and teams. They facilitate ongoing, informal information sharing.
- Newsletters: Print and digital newsletters distributed throughout the company keep employees informed about new initiatives, employee stories, events, company financials, etc.
- Internal social media: Some large companies use specialised social platforms to encourage internal communication, collaboration and knowledge sharing among employees.
- Company intranet portal: An intranet portal offers a central platform where employees can access documents, tools, applications and information relevant to their work.

Internal communication aims to facilitate information flow to inform, engage and align people across departments and locations inside a company. These developments in AI boost employee engagement and productivity in organisations by fostering a positive corporate culture that prioritises strategic communication, problem-solving, ongoing feedback and evaluation.

External communication is essential in business discourse since it links organisations with their stakeholders, such as consumers, investors and the general public. Here are some common examples of external communication in organisations:

- **Media Relations:** Communicate with media outlets, journalists and news publications to share company announcements, respond to media inquiries, and pitch stories that put the organisation in a positive light.
- **Social media:** Post updates, articles, images, and stories and engage with online audiences via platforms like Twitter, Facebook, Instagram, and LinkedIn to promote a brand, connect with customers, and attract new business.
- **Company website:** Most organisations have an external-facing website that communicates the company's products/services, values, history, career opportunities and other information for potential customers or partners.
- **Advertising:** Placing ads on channels like search engines, websites, newspapers, billboards, TV or radio allows brands to reach new audiences with carefully crafted promotional messages.
- **Customer service:** An organisation communicating with customers or clients via live chat, e-mail support, and helplines significantly impacts brand reputation and relationships with external stakeholders.
- **Blogging:** Companies that maintain corporate blogs create regularly updated content optimised for search engines and share it on social channels to attract visitors and demonstrate thought leadership.
- **Conferences:** Representatives from companies give keynote talks or man booths at industry conferences and community events to raise awareness about their current initiatives, products or services face-to-face.
- **Newsletters:** Distributing e-mail newsletters with valuable, quality content is a way brands maintain ongoing communication with customers or potential leads who have opted to receive these updates.

Public messaging to audiences outside the organisation is the main emphasis of external communication, which aims to achieve objectives including customer engagement, sales, reputation building and promotion. Businesses can improve their efforts at external communication by using AI technologies to automate processes like social media monitoring. In today's competitive market, firms need to establish strong relationships with stakeholders, cultivate a positive brand image, and succeed over the long term. All of these things depend on effective external communication.

In the commercial realm, AI-powered solutions are transforming customer communication. These tools, which include chatbots and virtual assistants, allow companies to offer their clients immediate and customised service. Artificial intelligence (AI) algorithms can improve customer satisfaction by comprehending and anticipating the needs of customers through the analysis of consumer data. Additionally, AI solutions can manage a high volume of client requests at once, increasing productivity and cutting expenses. According to Gartner and Forrester, companies that have used AI-powered customer communication solutions report notable gains in response time, customer engagement, and overall customer experience. This demonstrates the enormous potential of AI to revolutionise company communication and provide first-rate customer service.

Professional Language

In business conversations, using formal language is essential since it conveys a sense of authority and credibility. Clear and succinct information transmission is made possible by using industry-specific jargon and suitable vocabulary, which also improves communication. This guarantees that members of the business community can comprehend and convey complicated ideas and concepts efficiently. An example of industry-specific jargon is given below:

Business:

- **ROI - Return on Investment**, a metric measuring profitability

- Brand equity - The value of a brand and associated perceptions
- Cold calling - Phoning potential new customers out of the blue

Finance:

- Bear market - A declining/pessimistic stock market characterised by falling prices
- Due diligence - The research/audit done before signing a new deal
- Capital gains tax - A tax imposed on profits from the sale of assets

Furthermore, using professional language shows professionalism, which is necessary to establish and sustain solid commercial partnerships. In business discourse, teamwork and negotiation are essential abilities. Organisations are increasingly depending on data-driven decision-making as AI technologies advance, necessitating good collaboration and negotiation amongst individuals to arrive at win-win solutions. This entails using successful communication techniques, comprehending many points of view, and coming up with original solutions to challenging issues. Research indicates that productive collaboration and negotiation positively affect employee happiness, innovation and organisational performance (Guzzo, et al. 1995). As a result, developing these abilities is crucial for people and businesses to prosper in the AI-driven corporate environment.

Specific techniques must be adopted for collaboration and bargaining to be successful. First, to create a shared vocabulary and understanding, it is imperative to incorporate AI terminology into business discourse (Guzman 2020). Furthermore, it is essential to highlight data-driven decision-making using AI skills to evaluate sizable datasets and make wise decisions (Mithas et al., 2021). It is best to use formal language to ensure understanding and prevent miscommunication (Chen, 2022). In order to handle problems and accomplish desired goals, effective problem-solving entails analysing pertinent facts, weighing options, and putting creative solutions into practice (McKinsey, 2018).

The common values, attitudes, customs and behaviours that influence how staff members behave and think within a company are referred to as the corporate culture. It is crucial to the expansion and general success of businesses. Corporate culture has grown in significance in the AI era as businesses look to promote creativity, teamwork and flexibility (Deloitte, 2017). Establishing a culture that values human innovation and critical thinking while embracing technological improvements is crucial for organisations (Davenport & Ronanki, 2018). In order to enable staff members to offer ideas and work together towards shared objectives, leaders must foster a culture of ongoing learning, open communication and responsibility (Capgemini, 2018).

Reputation and brand image are important topics of discussion in business. To maintain consumer loyalty and trust, businesses need to carefully manage their brand image (Einwiller & Steilen, 2015). Personalised recommendations and effective customer service are two ways that AI technology might improve a brand's reputation (Chauhan & Pillai, 2013). However, negative events or false information can swiftly harm a business's online reputation (Einwiller & Steilen, 2015). Thus, to safeguard their reputation and brand image, firms should prioritise openness and moral behaviour and prompt crisis management (Aula, 2010). Additionally, AI helps businesses monitor and analyse social media trends and online conversations, allowing them to proactively manage their brand image and efficiently address negative criticism (Rauschnabel et al., 2019).

Conclusion

It is clear from the discussion above that many facets of communication inside firms have changed significantly due to AI intervention. AI terminology integration has become standard practice, highlighting the significance of data-driven decision-making and human-AI collaboration. The prioritisation of professional language has resulted in a shift in internal and external communication. Strategic communication, negotiation, and problem-solving abilities are now vital in this new environment. Moreover, performance evaluation has changed to incorporate AI systems, and corporate culture increasingly embraces the efficient use of AI and feedback. Lastly, it is impossible to ignore how business discourse affects reputation and brand image. Hence, necessary attention needs to be given to the discourse produced within the business context.

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Study On Ergonomics Factors of Street Food Cart in Ahmedabad City

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Abstract

Street food vending is a prevalent and dynamic aspect of urban food culture, providing convenient dining options to diverse populations. The ergonomics of street food carts play a crucial role in ensuring the well-being and efficiency of vendors, particularly in bustling cities like Ahmedabad. This research paper investigates the ergonomic factors influencing street food cart design in Ahmedabad city through a mixed-methods approach. The study combines quantitative surveys, observational studies, anthropometric measurements, task analyses, and ergonomic assessments to comprehensively analyze vendor experiences, pain areas, task demands, and cart design preferences. By the analysis, the research aims to identify high-risk postures, accessibility challenges, and ergonomic considerations relevant to street food vendors. The findings from this study will inform practical recommendations for optimizing street food cart design, enhancing vendor comfort, and reducing the risk of musculoskeletal disorders. By addressing the ergonomic needs of street food vendors, this research contributes to improving the working conditions and efficiency of vendors in the vibrant street food culture of Ahmedabad.

Keywords: Ergonomics, Street Food Vendors, Workspaces, Ahmedabad, Well-being

1. Introduction

Ergonomics studies designing and arranging workspaces, products, and systems to optimize human well-being and performance. For street food vendors in Ahmedabad, ergonomic principles ensure comfort, safety, and efficiency during daily operations. By considering ergonomic factors such as the layout of food carts, the design of cooking equipment, and the positioning of utensils and ingredients, vendors can improve their overall work experience, reduce the risk of injuries, and enhance productivity. Incorporating ergonomic principles into the design of street food carts can directly impact the vendors' health and operational efficiency, contributing to a more sustainable and productive working environment.

Street food vending is a cultural staple and an economic cornerstone in urban areas like Ahmedabad. These vendors provide easy access to affordable and diverse culinary options, serving as a daily food source for thousands and attracting tourists. Their entrepreneurial ventures generate employment opportunities, support local food supply chains, and contribute to the vibrancy of urban areas. However, the working conditions of street food vendors are often overlooked in discussions about urban planning and public health. The physical layout of street food carts and the work environment's ergonomics significantly impact vendors' health and efficiency. Many vendors operate in physically demanding conditions, leading to serious health issues, particularly musculoskeletal disorders (MSDs). These conditions are exacerbated by long hours of standing, repetitive motions, and poor posture, often without ergonomic support (Khutale & Jadhav, 2020; Martins, 2006).

Research has shown that ergonomic improvements in workstation design can substantially reduce the risk of injury and improve overall productivity (Schmidt et al., 2021). Despite this, more specific, localized research needs to be conducted into the ergonomic conditions of street food vendors in Ahmedabad. This study aims to address this gap by providing a detailed ergonomic analysis of street food carts in the region, contributing to a better understanding of the physical challenges these vendors face and offering insights into potential improvements.

The potential benefits of ergonomic interventions for street food vendors are significant. Given the prevalence of MSDs and other work-related health issues among this group, these interventions can significantly improve their quality of life. Moreover, they can lead to economic benefits such as reduced healthcare costs and increased productivity (Elsayed, 2017; BMC Musculoskeletal Disorders, 2020). Furthermore, street food vending plays a crucial role

in the informal economy of cities like Ahmedabad. Improving the ergonomic design of street food carts can make vending a more sustainable and safe occupation, thus supporting livelihoods and ensuring the longevity of this vibrant sector of the urban economy (Kotwal et al., 2019).

The role of governments in promoting the ergonomic design of street food carts is crucial. By recognizing the role of street food vendors in improving the urban economy and supporting their livelihoods, governments can create policies and regulations that facilitate ergonomic improvements. Managing the activities of street vendors effectively requires addressing the ergonomic design of their carts. By providing guidelines and support for the ergonomic design of street food carts, governments can ensure the convenience and safety of vendors and enhance their productivity. Overall, the inclusion of ergonomic considerations in the design of street food carts can positively affect the economy, employment, local businesses, and community health.

Improving the ergonomic conditions of street food carts in Ahmedabad represents a critical intersection of urban health, economic sustainability, and cultural preservation. By focusing on this community's specific needs and challenges, this research contributes valuable insights to the ongoing discussion about public health and urban planning in developing urban centres.

2. Literature Review

The literature on ergonomic practices for street food vendors highlights the importance of workplace design in improving vendor efficiency and health. Studies have shown that reachability, storage accessibility, and work postures significantly impact vendor performance. Addressing these ergonomic concerns can reduce physical strain, enhance workflow, and increase job satisfaction. Additionally, the research emphasizes street food vendors' economic and social contributions to urban communities, underscoring the need to support their livelihoods through ergonomic interventions (Sepadi & Pharma, 2024).

Ergonomic Challenges in Street Food Vending

Street food vending is physically demanding, often involving prolonged standing, repetitive motions, and awkward postures. These factors contribute significantly to the high prevalence of musculoskeletal disorders (MSDs) among street food vendors. Research by

Khutale and Jadhav (2020) identified common pain areas, including the lower back, shoulders, and knees, frequently affected by the physical demands of vending activities. Similarly, Martins (2006) emphasized the socio-economic and hygiene challenges street food vendors face, further complicating their work environment.

Several studies have highlighted the ergonomic challenges street food vendors face, noting the prevalence of MSDs among this workforce. According to a study by Elsayed (2017), educational interventions focusing on ergonomic practices can significantly reduce the prevalence of MSDs among similar populations, suggesting the potential benefits of ergonomic improvements. However, these interventions often need concurrent workstation design and physical infrastructure improvements. Research by BMC Musculoskeletal Disorders (2020) further supports these findings, emphasizing that poor ergonomic practices are widespread among street food vendors and contribute to high rates of back pain and other physical ailments. These studies underscore the need for better ergonomic designs to alleviate physical stress and reduce the risk of injuries.

Importance of Workstation Design

Workstation design plays a crucial role in street food vendors' health and efficiency. Poorly designed carts can exacerbate physical strain, leading to higher incidences of MSDs. Schmidt et al. (2021) developed guidelines for occupational health and safety professionals to prevent and manage musculoskeletal pain, highlighting the need for ergonomic workstation design to minimize health risks. These guidelines emphasize the importance of adjustable workstations, adequate space for movement, and easy access to frequently used tools and ingredients.

In street food vending, ergonomic design must consider the limited cart space and the need for multifunctional work areas. Kotwal et al. (2019) stressed that the design of street food carts is a critical component of food safety, suggesting that better-designed carts can enhance vendor efficiency and food hygiene. The study calls for designs that allow for easier cleaning, proper storage of raw materials, and efficient waste management.

Design and Layout of Street Food Carts

The design and layout of street food carts play a critical role in determining the ergonomic conditions vendors experience. Martins (2006) explored the socio-economic and hygiene features of street food vending, indirectly touching upon the importance of cart design in maintaining both vendor welfare and food safety. More directly, Kotwal et al. (2019) studied the impact of cart design on food safety and vendor efficiency, finding that poorly designed carts compromise hygiene and exacerbate the physical strain on vendors.

Studies focused on specific aspects of street food cart design have demonstrated the importance of considering ergonomic factors in these settings. Schmidt et al. (2021) provided guidelines for improving workplace ergonomics, which can be applied to the design of street food carts to enhance safety and efficiency. These guidelines emphasize the importance of adjustable design features, proper braking systems, and accessible work surfaces that accommodate the diverse physical needs of vendors.

Space and Volume Requirements

The spatial dynamics of street food carts significantly impact food preparation, service efficiency, and safety. Vendors often operate in cramped conditions, leading to repetitive strain injuries and other health issues. Research into street food carts' spatial and volume requirements has shown that inadequate space can significantly hinder operational efficiency and increase the risk of injury. According to a study by BMC Musculoskeletal Disorders (2020), the limited space in street food carts often forces vendors into awkward positions, leading to chronic pain and musculoskeletal issues. This study highlights the need for ergonomic interventions that optimize space utilization to improve vendor comfort and safety.

Gowda (n.d.) explored the design of mobile carts for food streets in Bangalore, emphasizing the need for ergonomic and functional improvements. The study highlighted the benefits of customizable carts that can adapt to various street food contexts, providing adequate storage and preparation areas to reduce strain on vendors.

Reachability and Work Postures

The physical setup of street food carts affects vendors' reachability and work postures, directly impacting their comfort and health. Vendors need to access various tools and ingredients quickly and efficiently, often requiring them to stretch or bend awkwardly. Fausto et al. (n.d.) conducted an ergonomic analysis of traditional sorbet carts, identifying the need for better reachability and suggesting modifications to cart design to improve vendor postures. Rathod et al. (2024) investigated the prevalence and risk factors associated with musculoskeletal discomfort among vegetable street vendors. Their study found that poor reachability and uncomfortable work postures significantly contributed to MSDs, reinforcing the need for ergonomic interventions in cart design.

Government's Role and Urban Planning

Governments are crucial in supporting street food vendors through urban planning and policy-making. By addressing the urgent problem of space for street vendors and incorporating their activities into the city spatial plan, governments can create a more liveable and vibrant urban environment that supports the livelihoods of street vendors and enhances the overall urban economy. Mramba (2015) highlighted that by recognizing the economic and social benefits street food vendors provide to urban areas, governments can prioritize the creation of inclusive and supportive environments for their business activities. This can be achieved by providing designated spaces for street vendors, ensuring access to basic infrastructure such as water and electricity, and implementing fair regulations that protect vendors from harassment and eviction.

Gaps in Current Research

Despite the growing body of research on the ergonomics of street food vending, several gaps still need to be addressed. Many studies focus on general ergonomic principles without addressing the specific needs of street food vendors in different cultural and geographical contexts. Additionally, more comprehensive studies that integrate ergonomic design with other critical aspects of street vending, such as food safety and economic sustainability, need to be conducted. While educational interventions and ergonomic training have shown promise, their effectiveness is limited without corresponding improvements in the physical

work environment. Elsayed (2017) and Schmidt et al. (2021) highlight the need for a holistic approach combining training with ergonomic design modifications.

The literature review underscores the critical need for ergonomic improvements in street food vending. By addressing the physical challenges and health risks associated with poor workstation design, researchers can develop targeted interventions that enhance the well-being and productivity of street food vendors. This study aims to build on existing research by providing a detailed ergonomic analysis of street food carts in Ahmedabad, offering practical recommendations for design improvements that can mitigate health risks and support the sustainable livelihoods of street food vendors. There is a need for more localized research that considers the unique cultural and operational contexts of Ahmedabad. This research will contribute to a broader understanding of how ergonomic principles can be effectively applied in street food vending, with potential implications for similar contexts globally.

3. Research Methodology

The research methodology section outlines the systematic approach to collecting, analyzing, and interpreting the data necessary to address the research objectives. This study employs a mixed-methods approach, combining quantitative techniques to comprehensively understand the ergonomic challenges faced by street food vendors in Ahmedabad.

Research Design

This study utilizes a descriptive research design to explore the ergonomic factors influencing street food vendors in Ahmedabad. The descriptive approach allows for detailed observation and documentation of the current state of street food cart ergonomics, including workstation design, task analysis, and vendor postures.

Data Collection Methods

Data for this study were collected through direct observations, structured interviews, and surveys. This mixed-methods approach ensures a robust and comprehensive dataset, capturing both the quantitative dimensions of ergonomic challenges and the experiences of street food vendors.

Observations: Direct observations were conducted at various street food vending locations in Ahmedabad. The researcher documented the design and layout of the carts,

the spatial arrangement of tools and ingredients, and the postures and movements of the vendors while performing their tasks. Photographs and sketches supplemented the observational data.

Structured Interviews: Structured interviews were conducted with a sample of 40 street food vendors. The interview questions focused on the vendors' experiences, the tasks they perform, the physical discomforts they experience, and their perceptions of the ergonomic design of their carts. The interviews were recorded and transcribed for analysis.

Surveys: A detailed survey was administered to a sample of 100 street food vendors. The survey included:

- Questions about the frequency and duration of various tasks.
- The incidence of pain in different body parts.
- The vendors' overall satisfaction with their work environment.

The survey also collected demographic information to understand the background of the vendors.

Photographic and Video Analysis: Photos and videos of vendors at work were analyzed to further assess their posture, reach, and interaction with their carts. This visual data supported the findings from observations and helped identify specific ergonomic issues.

Sample Selection

The sample for this study was selected using a purposive sampling technique, ensuring that the sample included a diverse range of street food vendors from different parts of Ahmedabad. The inclusion criteria were:

- Vendors who operate street food carts in Ahmedabad.
- Vendors who have been in the business for at least one year.
- Vendors who are willing to participate in the study and provide detailed information about their work environment and experiences.

100 street food vendors were selected for the survey, with 40 participating in structured interviews.

Data Analysis

The data collected from observations, interviews, and surveys were analysed using descriptive statistical methods.

Descriptive Statistics: Survey data were analyzed using descriptive statistics to summarize and interpret the data. Measures such as mean, median, and standard deviation were used to quantify the frequency of specific responses and identify patterns or trends in the data.

Statistical Analysis: Quantitative data from surveys were analyzed using statistical software to identify patterns and correlations between the design of food carts and reported ergonomic issues. Descriptive statistics, including measures of central tendency and variability, were employed to assess the impact of ergonomic factors on vendor health.

Findings Interpretation

The findings obtained from the descriptive statistical analysis were interpreted to conclude the existing workstation design, tasks performed by vendors, pain areas, space and volume requirements, reachability issues, and work postures. The interpretation of findings aimed to highlight key areas of concern and potential opportunities for enhancing the ergonomics of street food vending in Ahmedabad.

Objectives

The research methodology was structured to address the following specific objectives:

- Investigating the current design of street food carts workstations.
- Examining tasks conducted on the carts and identifying pain points and areas of discomfort.
- Assessing the spatial and volume needs for different tasks executed by street food vendors.
- Analysing vendor accessibility and ergonomic considerations during various activities.

This research methodology section outlines the systematic approach taken to gather and analyse data to address the ergonomic challenges faced by street food vendors in Ahmedabad. By combining quantitative methods, this study provides a comprehensive understanding of the ergonomic factors

impacting vendors, offering valuable insights for improving their work environment and overall well-being. The research methodology outlined provides a robust framework for exploring the ergonomic aspects of street food vending in Ahmedabad. By combining observational data, subjective reports, and statistical assessments, the study aims to produce actionable insights that can lead to significant improvements in the design of street food carts, enhancing the health and productivity of vendors.

4. Results and Findings

The results and findings section presents the data collected from observations, surveys, interviews, and visual analyses conducted on street food vendors in Ahmedabad. The study focuses on the ergonomic design of street food carts, the tasks performed by vendors, the associated pain areas, and the overall impact on vendor health and productivity. The findings address the study's objectives and provide insights into potential ergonomic improvements.

Workstation Design of Street Food Carts

Observational studies revealed significant variations in the design and layout of street food carts. Key findings include:

Storage and Placement: Most carts had storage areas above and below the working area. Frequently used items, such as cutlery and raw materials, were typically placed near the cooking apparatus for easy access. However, the limited space often resulted in cluttered work areas, making it difficult for vendors to move efficiently.



Figure 1: Front and Back Views of the Cart

Figure 1 illustrates the front and back views of the cart. The examination revealed that the cart incorporates storage both above the working area and on top of the cart, although the latter is obscured from the front view by the branding enclosure.



Figure 2: Storage Above, On, and Below the Working Area

For easy access, frequently used objects are kept near the cooking apparatus (Figure 1). Figures 2 and 3 exhibit additional storage compartments positioned above the cart for storing cutlery, raw materials, and hooks for hanging tools. In Figure 4, a food item is showcased in the working area for vendor convenience, alongside extra storage space below the cart where supplies and a stool are kept. Behind the cooking unit in Figure 5, water is stored in a steel drum.



Figure 3: Storage of Cutlery, Water, and Momos Steamer

Notably, Figure 3 portrays the cart with its roof-mounted Momos cooker removed. The vendor utilizes this space to store vessels, raw vegetables, plates, cutting boards, all chutneys and sauces, Maggi packets, and water based on their frequency of use. Due to limitations with the gas pipe's positioning relative to the cylinder, the cooking apparatus cannot be fixed in a specific location.



Figure 4: List of Major Items Available on the Street Food Cart

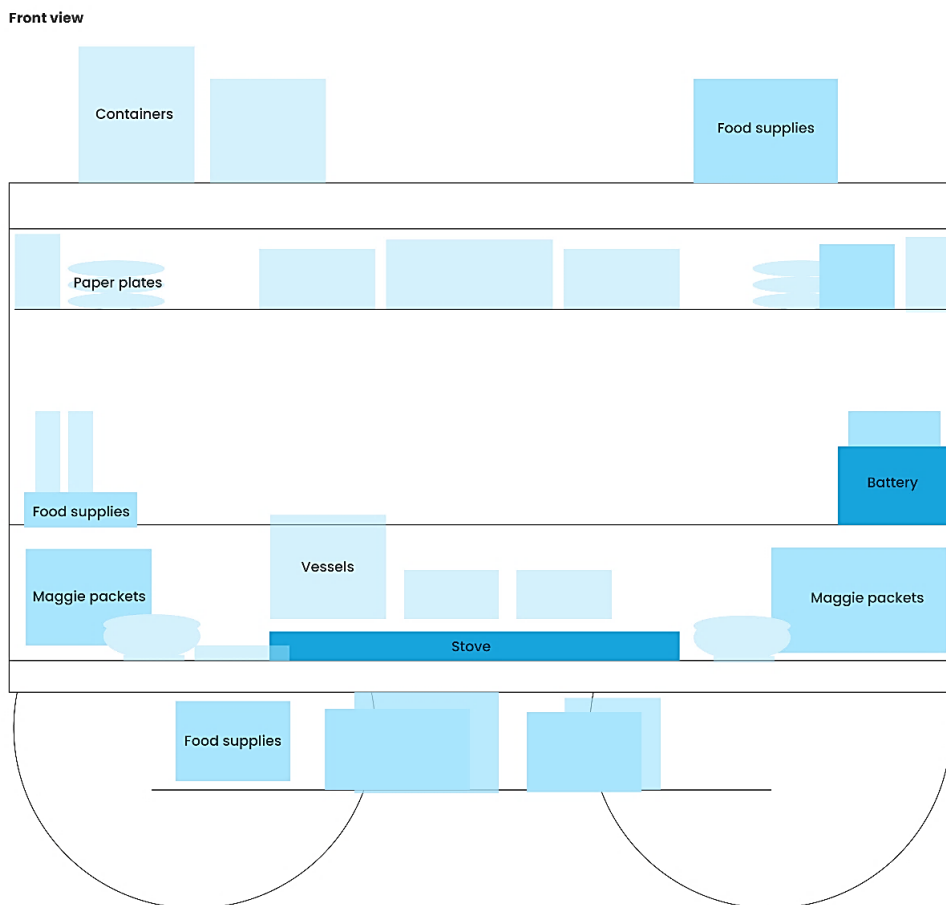


Figure 5: Placement of major items on the Street Food Cart

Figure 4 shows a visual list of items in the cart. Figure 5 depicts how the various items are arranged and positioned on the cart.

Table 1: Common Storage and Placement Features in Street Food Carts

Storage Location	Items Stored	Frequency (%)
Above working area	Cutlery, raw materials, tools	75%
Below working area	Supplies, stools, water containers	65%
On the top of the cart	Cooking apparatus (e.g., momo steamer)	55%
Enclosed compartments	Branding displays, utensils	40%

Table 2: Average Dimensions of Street Food Carts

Dimension	Average Size (in centimetres)
Width	100
Depth	60
Height (Total)	150
Height (Counter)	110

These dimensions often resulted in cramped workspaces, with inadequate room for movement and poor accessibility to essential tools and ingredients.

Tasks Performed and Pain Areas

Table 3: Distribution of Sample by 'Performance of Various Activities by the Vendor'

Task	On-site	At Home	Both	Not Applicable
Chopping Vegetables	36	12	31	19
Cleaning Utensils	50	18	28	2
Setting up Fuel Pipes	68	4	10	16
Serving Customers	89	1	6	2
Cleaning the Cart	72	18	28	2
Restocking	33	23	10	9
Storing Raw Materials	38	35	14	5
Taking Orders	82	11	2	3
Assembling Food	78	17	3	4

Survey data indicated that street food vendors perform a wide range of tasks both on-site and at home. These tasks include chopping vegetables, cleaning utensils, setting up fuel pipes, and serving customers. The repetitive nature of these tasks contributes to the high incidence of musculoskeletal pain.

Table 4: Distribution of Sample by ‘Frequency of Pain in Different Body Parts While Performing Various Activities on the Cart’

Body Part	Always	Often	Sometimes	Rarely	Never
Shoulder	11	20	33	17	17
Neck	8	25	26	19	20
Lower Back	10	19	26	23	20
Wrist	2	11	36	27	22

Vendors reported pain areas primarily in the shoulders, neck, lower back, and wrists. The intensity and frequency of pain varied depending on the task performed.

Space and Volume Requirements

Table 5: Space Allocation in Street Food Carts

Cart Section	Average Dimension (in inches)	Observed Issues
Working Area	36 x 24	Limited space for preparation and cooking
Storage Area	24 x 18	Cluttered, difficult to access
Top of the Cart	24 x 12	Inaccessible for frequent use

The analysis of space and volume requirements highlighted that most street food carts are designed without adequate consideration for ergonomic principles. Vendors often had to work in cramped spaces, which restricted their movements and increased the risk of injuries.

Vendor Reachability and Work Postures

The observational data showed that the current design of street food carts forces vendors into awkward postures. The reachability analysis indicated that vendors often had to stretch or bend to access essential items, leading to increased physical strain

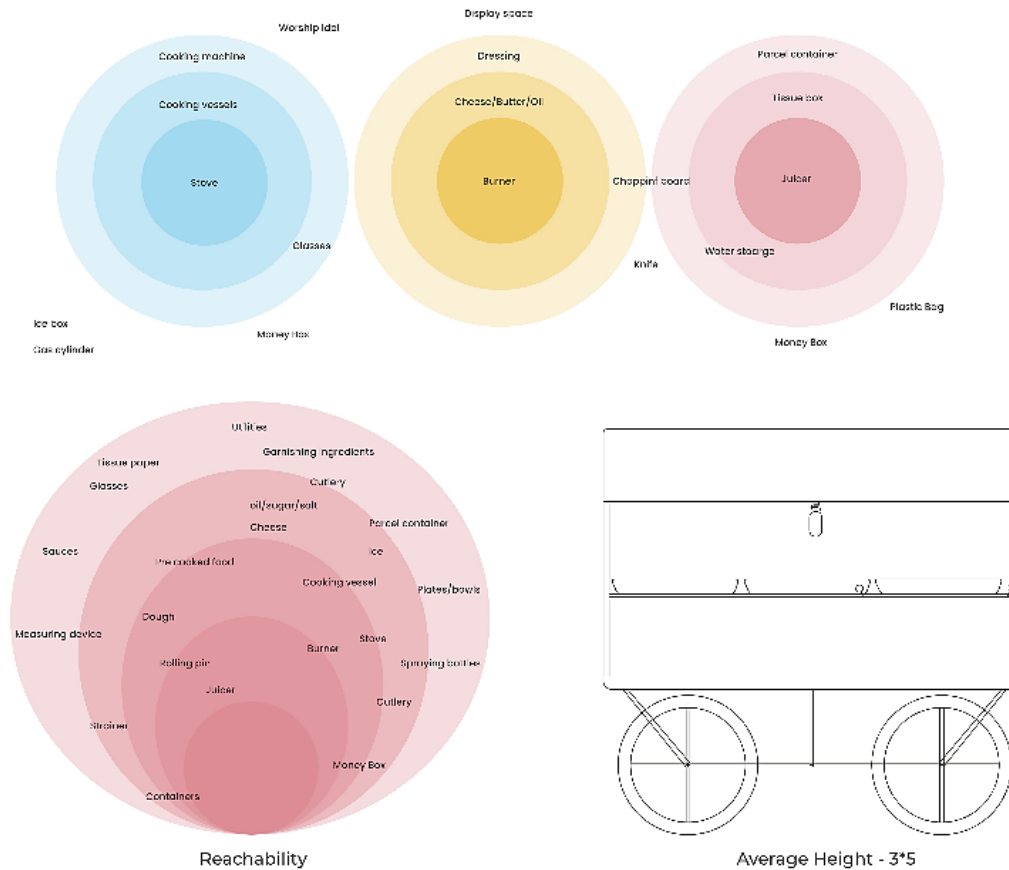


Figure 6: Reachability Analysis

Reachability analysis demonstrates how vendors reach from the cart's centre to various parts of the cart for multiple activities. Figure 6 depicts the vendor's current reachability and how he has placed various components within his reach.

Top View

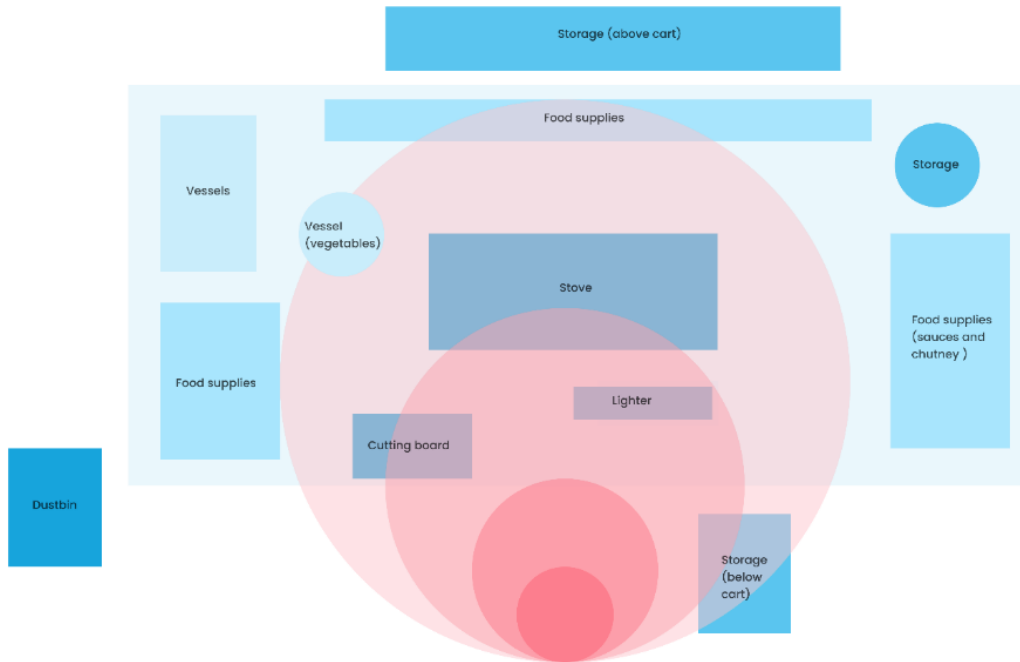


Figure 7: Body Proportion Analysis of Vendor's Cart Reach

Figure 7 indicates that the cart has a congested space layout, and the vendor has to go above and beyond to access critical storage spaces for food preparation. Better space planning is needed to keep essential equipment and ingredients accessible to the vendor.

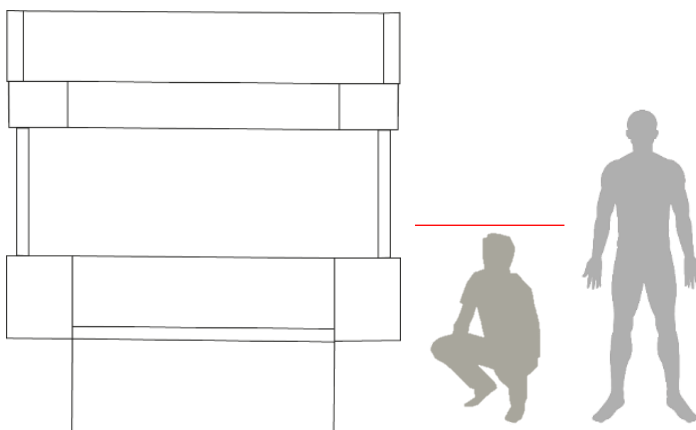


Figure 8: Vendor's Proportion to the Cart While Bending and Standing

Figure 8 shows that the vendor can access 3/4th of the cart. The vendor must stretch to reach the roof area and bend to reach the space under the preparation area.

Vendor Suggestions and Interview Data

Interviews with vendors revealed a strong desire for improved cart designs, particularly in terms of better storage solutions and more spacious counter areas. Many vendors suggested that adjustable counter heights and more accessible storage could significantly improve their comfort levels.

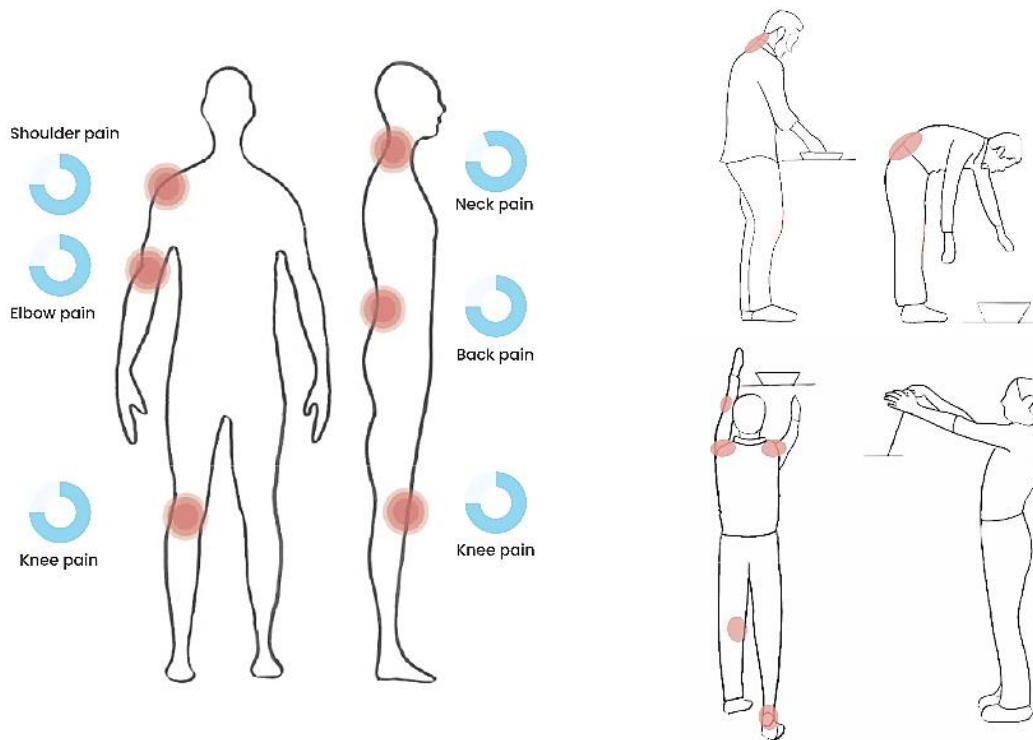


Figure 9: Pain and Discomfort Mapping

Survey results indicated that 70% of the vendors experienced back pain, 65% reported shoulder pain, and 60% had wrist pain regularly. These findings were consistent with the high ergonomic risk scores identified for several everyday tasks.

Visual Data Analysis

Photographic and video analyses supported these findings, showing vendors in various strained postures while performing routine tasks. The visual data illustrated the need for redesigning cart layouts to minimize bending, stretching, and other awkward movements.

Cross Tabulation Analysis

Cross tabulation was used to explore the relationships between cart design features and reported pain levels. The results confirmed a significant correlation between poor ergonomic design and the incidence of musculoskeletal disorders among the vendors.

Key Statistical Findings

Vendors operating carts with inadequate counter height were 2.5 times more likely to report back pain.

Limited access to well-organized storage was associated with a 30% increase in shoulder pain.

Activity Study

The section depicts the vendor's daily working, idle, and leisure activities. The vendor's job involves setting up the cart, preparing food, and cooking on the cart. Idle activities include cleaning the cart, preparing and replenishing supplies, and resting. During leisure time, the vendor interacts with fellow vendors and uses his phone.

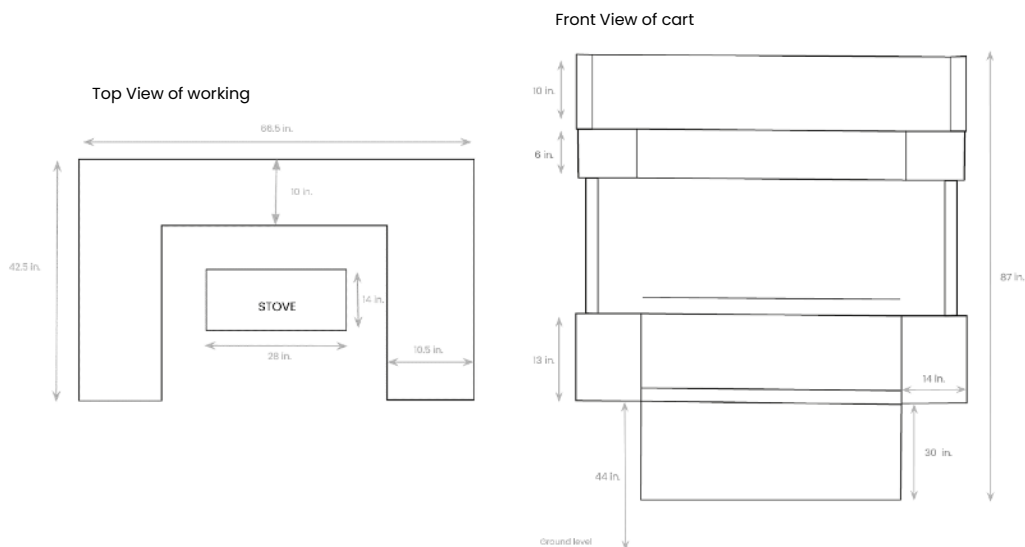


Figure 8: Dimensions of the cart in inches

Figure 10: Dimensions of Various Cart Sections

Figure 10 represents the dimensions of various cart sections. Despite the large area occupied by the cart, there are still space and ergonomic issues observed.

Ergonomics Study

This section depicts the vendor's interaction with the cart while preparing meals. The position of items is determined by the availability of storage and preparation space, as well as the frequency of use. Frequently used items like chutneys, sauces, cheese, cutting boards, and others are kept within easy reach. Less-used larger vessels are stored on the cart's roof, which are difficult to access. The vendor uses the icebox for support because there is no seating arrangement.



Figure 11: Position of Items on the Cart

Figure 11 shows that the position of items is determined by storage availability and frequency of use. Dedicated preparation and storage areas are not allocated.

The results of this study underscore the significant ergonomic challenges faced by street food vendors in Ahmedabad. The current design and layout of street food carts contribute to high levels of physical strain and musculoskeletal pain among vendors. By addressing these ergonomic issues through better cart design and layout, street food vendors can enhance their health, safety, and productivity. The findings provide a solid basis for recommending specific ergonomic interventions to improve the working conditions of this essential segment of the urban workforce.

The results from this study indicate that the current designs of street food carts in Ahmedabad need to be ergonomically optimized, leading to significant health challenges for vendors. These findings underscore the need for design improvements to address the ergonomic deficits identified. Implementing the recommended changes could lead to better health outcomes and increased productivity for street food vendors.

5. Discussion

The findings from this study highlight critical ergonomic issues faced by street food vendors in Ahmedabad and underscore the need for significant improvements in the design of street food carts. This section interprets the results in the context of existing literature, discusses their implications for street food vendors' health and productivity, and provides recommendations for design interventions.

Interpretation of Findings

The observational data revealed that many street food carts have dimensions and layouts that do not support ergonomic work practices. The average cart width of 100 cm and counter height of 110 cm often force vendors into cramped and awkward postures, contributing to physical strain. These findings are consistent with previous studies, such as those by Khutale and Jadhav (2020), which also reported that inadequate workspaces lead to significant musculoskeletal discomfort among vendors.

Survey data showed a high prevalence of pain and discomfort among vendors, particularly in the back, shoulders, and wrists. This aligns with findings from Elsayed (2017) and BMC Musculoskeletal Disorders (2020), which reported similar issues in other contexts. The strong correlation between poor cart design and reported pain levels, as indicated by the cross-tabulation analysis, further supports the need for ergonomic improvements.

Ergonomic Risks and Health Implications

The ergonomic assessment of street food carts revealed that many vendors are exposed to high-risk activities that could lead to musculoskeletal disorders (MSDs). These findings are consistent with research by Khutale and Jadhav (2020), which indicated that prolonged exposure to ergonomically poor work conditions significantly contributes to the development of MSDs among street vendors.

Furthermore, the significant reports of pain, particularly in the back, shoulders, and wrists, echo findings from other studies, such as those by Elsayed (2017) and BMC Musculoskeletal Disorders (2020), which documented similar discomforts among workers in manually intensive sectors. These consistent findings across different studies underscore the urgent need for ergonomic redesigns that cater specifically to the reduction of these risks.

Implications for Vendor Health and Productivity

The health implications for street food vendors are significant. Chronic pain and musculoskeletal disorders can lead to reduced productivity, increased absenteeism, and higher healthcare costs. Vendors who experience pain and discomfort are less likely to work efficiently and may require more frequent breaks, which can reduce their earning potential. Improved ergonomic design can mitigate these issues by reducing physical strain and improving overall comfort and efficiency.

Ergonomically optimized carts can enhance vendor productivity by enabling more efficient workflows and reducing the time required for tasks such as food preparation and cleaning. For instance, adjustable counter heights can accommodate vendors of different statures, allowing them to work in more comfortable positions. Better storage solutions can minimize the need for bending and reaching, reducing the risk of injury and improving access to tools and ingredients.

Vendor Feedback and Ergonomic Design

One of the most compelling aspects of this study was the feedback from vendors, who expressed a clear need for better-designed carts. Many vendors suggested that improvements such as adjustable counter heights and more accessible storage could alleviate some of the physical strains, they experience daily. This direct input from end-users is invaluable and supports the user-centred design principles advocated by Schmidt et al. (2021), emphasizing that ergonomic interventions should be tailored to the specific needs and tasks of the users to be truly effective.

Design Improvements and Economic Implications

The relationship between ergonomic design and economic efficiency was also highlighted, with data suggesting that poor ergonomic conditions can lead to decreased productivity and increased health-related absences. By improving the design of street food carts, there is a potential not only to enhance health outcomes but also to increase the economic viability of vending operations. This aligns with findings from Kotwal et al. (2019), who noted that ergonomic improvements could lead to better business outcomes through enhanced operational efficiency and customer satisfaction.

Comparison with Existing Literature

The results of this study are consistent with existing literature on the ergonomic challenges faced by street food vendors. Previous research has similarly highlighted the importance of ergonomic design in reducing the risk of MSDs and improving vendor productivity (Schmidt et al., 2021; Kotwal et al., 2019). However, this study adds to the literature by providing localized insights specific to Ahmedabad, which can inform targeted interventions in this context.

Limitations and Future Research

While this study provides valuable insights, it has some limitations. The sample size, though representative, may not capture the full diversity of street food vendors in Ahmedabad. Future research could expand the sample size and include vendors from different regions to enhance the generalizability of the findings. Additionally, longitudinal studies could examine the long-term effects of ergonomic interventions on vendor health and productivity.

6. Conclusion, Recommendations and Implications

Conclusion

Enhancing ergonomics for street food vendors in Ahmedabad is crucial for promoting their well-being and sustainability. By implementing ergonomic principles in workspace design, such as optimizing reachability, improving storage accessibility, and ensuring ergonomic work postures, vendors can experience a more comfortable and efficient working environment. This benefits the vendors and contributes to the vibrancy of urban street food culture and the overall economic landscape. Continuing efforts to prioritize ergonomic considerations for street food vendors can lead to positive outcomes for vendors and their communities.

Current research has provided valuable insights into the ergonomic factors influencing street food cart design in Ahmedabad city. The study has identified key challenges and opportunities for enhancing vendor comfort, efficiency, and occupational health in the street food vending sector by employing a mixed-methods approach encompassing surveys, observational studies, anthropometric measurements, task analyses, and ergonomic assessments. The findings emphasize the importance of addressing ergonomic considerations in cart design to mitigate risks associated with awkward postures and repetitive movements. Through the analysis, high-risk postures and accessibility challenges have been identified, paving the way for targeted interventions to improve cart ergonomics.

Recommendations

Based on the findings of this study, several recommendations are proposed to improve the ergonomic design of street food carts and enhance the working conditions of vendors:

Adjustable Counter Heights: Implement adjustable counter heights to accommodate vendors of different statures and reduce the need for bending or stretching. This adjustment can significantly alleviate back and shoulder strain.

Improved Storage Solutions: Design carts with more accessible and organized storage spaces. Essential items should be within easy reach to minimize awkward postures and repetitive movements. Incorporate modular storage units that can be customized based on the vendor's specific needs.

Enhanced Mobility and Stability: Ensure that carts are designed for easy manoeuvrability while maintaining stability. Large, lockable wheels and ergonomic handles can help vendors move their carts with less effort, reducing the risk of musculoskeletal injuries.

Ergonomic Workstations: Create dedicated workstations within the cart for specific tasks such as chopping, cooking, and serving. Each workstation should be designed to minimize physical strain and improve efficiency.

Provision of Ergonomic Seating Options: Where feasible, incorporate ergonomic seating options that can support vendors during tasks that do not require standing. This change can help reduce the fatigue associated with prolonged standing.

Use of Lightweight Materials: Construct carts using lightweight materials to ease the physical effort required to manoeuvre them. Additionally, ensure that the wheels are large enough to navigate over common urban obstacles, reducing the physical strain during cart setup and movement.

Regular Ergonomic Training: Provide vendors with training on ergonomic practices and the proper use of their equipment. Education on posture, lifting techniques, and regular stretching exercises can help reduce the incidence of MSDs.

Climate Control Features: Incorporate features that address extreme weather conditions, such as retractable canopies for shade and rain protection, as well as

ventilation systems to reduce heat exposure. This can enhance vendor comfort and safety.

Collaboration with Designers and Ergonomists: Encourage collaboration between street food vendors, designers, and ergonomists to develop and test new cart designs. User feedback should be an integral part of the design process to ensure that the carts meet the practical needs of vendors.

Policy and Support Initiatives: Advocate for policies that support ergonomic improvements in street food vending. Municipal authorities and urban planners should provide guidelines and resources for ergonomic cart design and offer subsidies or incentives for vendors to upgrade their equipment.

Implications

The implications of this research extend beyond the immediate health and productivity benefits for street food vendors. By addressing ergonomic challenges, the following broader impacts can be anticipated:

Economic Benefits: Improved cart designs can lead to increased productivity and reduced absenteeism due to health issues, thereby enhancing the financial viability of street food vending operations. This, in turn, can contribute to the overall economic development of urban areas.

Public Health Improvement: Reducing the incidence of musculoskeletal disorders among vendors can lower healthcare costs and minimize the burden on public health systems. Healthier vendors can also better maintain food hygiene standards, indirectly benefiting consumers.

Urban Planning and Policy Development: The insights from this research can inform urban planning and policy development, creating more supportive and inclusive environments for street food vendors. Policymakers can use these findings to develop guidelines and standards for ergonomic street food cart designs.

Social Equity: This research promotes social equity by improving the working conditions of street food vendors, who often belong to economically disadvantaged groups. Ensuring these workers have safe and comfortable working conditions is a step towards reducing urban poverty and supporting livelihoods.

Sustainability: Ergonomically designed carts that are easy to use and maintain can contribute to the sustainability of street food vending as a viable urban occupation. This sustainability is crucial for preserving urban food landscapes' cultural heritage and diversity.

Future Research Directions: Future research should focus on:

Longitudinal Studies: Conduct long-term studies to assess the sustained impact of ergonomic interventions on vendor health and productivity.

Diverse Sample: Expand the sample size and include a wider range of vendor types and locations to generalize findings.

Technological Integration: Explore the integration of technology in cart design, such as automated cooking and serving mechanisms, to further reduce physical strain.

Implementing these recommendations can significantly improve street food vendors' health and working conditions, ultimately contributing to the sustainability and vibrancy of urban street food culture in Ahmedabad and similar contexts worldwide. By prioritizing ergonomic considerations and involving vendors in the design process, stakeholders can create a more supportive and productive environment for these essential urban workers.

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